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Falls Prevention Program for Community-Dwelling Older Adults

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FALLS PREVENTION PROGRAM FOR COMMUNITY-DWELLING OLDER ADULTS

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ABSTRACT

The purpose of this scholarly project was to develop a multidisciplinary falls prevention program manual intended to be implemented in Senior Citizen Centers (SCC) for the community-dwelling older adult population. Falls have a major impact on the independence of the older adult population aged 65 years and older (Stevens & Sogolow, 2008). Therefore, the goal of this project is to promote healthy aging in place through the use of meaningful occupations in order to potentially reduce the number of falls among the older adults.

A literature review was conducted to obtain scientific reading and research to find what has and has not worked in the prevention of falls among community-dwelling older adults. After a successful search of literature was completed the literature review was developed and the need for an occupation-based multidisciplinary falls prevention program was determined in order to decrease the number of falls and improve participation in meaningful occupations.

A falls prevention program manual was developed according to the Ecological Model of Occupation and the OT Practice Framework. This product has a strong focus on OT and occupation-based activity. The program described in the manual is intended to be implemented in a SCC for community-dwelling older adults who have fallen, who have a fear of falling, and for those wishing to learn how to prevent future falls. The manual includes instructions, handouts, activities, pictures, and assessments needed to implement each of the one hour sessions for the entire six week program.

This manual will provide professionals and older adults the knowledge for the prevention of falls that will allow them to safely and independently age in place. The program will be unique to existing falls prevention programs as it is multidisciplinary and focuses on occupation-based activities to promote older adult participation in the home and community environments.

CHAPTER I

INTRODUCTION

The purpose of this scholarly project is to prevent falls in community-dwelling older adults and to increase participation in their home and community environments in order to safely age in place. Falls have a major impact on the independence of the older adult population aged 65 years and older (Stevens & Sogolow, 2008). Approximately one third of the older adult population living in the community falls each year (Rubenstein & Josephson, 2006; Filiatrault et al., 2007; Nikolaus & Bach, 2003). Development and implementation of a multidisciplinary falls prevention program can enable older adults to learn the skills needed to prevent future falls.

This scholarly project was developed specifically for community-dwelling older adults as literature indicated the highest rates of falls in this population. Among the older adult population, about one in ten falls has an outcome of a serious injury such as hip fractures and head injuries (Center for Disease Control [CDC], 2008; MacCulloch et al., 2007). Therefore, falls are important to address with this population in order to allow them to safely perform occupations in their daily lives.

The proposed intervention type for the falls prevention program is a multidisciplinary approach with the use of a variety of falls prevention strategies combined into a manual. Literature has indicated that multifactiorial interventions consisting of exercise, home modifications, and education have been the most beneficial

(Clemson et al., 2004; Gates, Lamb, Fisher, Cooke, & Carter, 2008; Wagner et al., 1994). An OT has the knowledge, skills, and education needed to teach older adults and would be best suited to organize and implement this program using the developed manual provided in chapter IV. OTs are trained in evaluations which includes assessment of the person, context, task, and their performance. They can provide home assessments, make modifications, screen for cognitive and vision deficits, and teach safety precautions in order to help the older adults safely age in place while continuing to complete daily occupation-based activities. OTs have the skills to assess and manage person and environmental risk factors in activities that older adults participate in. OTs can also train clients, families, and other team members on how to help increase safety and function (Scheinholtz & Miller, 2006).

The role of an OT is to facilitate and organize the falls prevention program. The OT Practice Framework is an important part of the falls prevention program and was used as a guide to develop the product in chapter IV. The client factors were taken into consideration when the most appropriate learning methods were determined. For example, the mental and sensory functions were considered in the development of the educational handouts as they have larger font and are easy to understand. Performance skills were also taken into consideration during the implementation of the program. For example, the safety during occupations activity includes several daily occupations that were modified for the older adult's performance abilities. The performance patterns were addressed as well. The participants were encouraged to modify existing habits, routines, and roles in order to become more active while staying safe. For example, the staying active session encouraged the participants to add activity to their existing routine. They

were also given information on how to safely become more active. Context was also addressed throughout the falls prevention program as home hazard activities were completed and home hazard checklists were available. The older adults can be provided with the knowledge and skills regarding home safety and they are encouraged to make the necessary changes in order to make their homes safer.

The provided manual addresses several factors influencing the success of preventing falls among the older adult population. The benefits of the falls prevention program manual are that it is a multidisciplinary approach which provides the older adults with the knowledge and skills from a variety of professionals. Another benefit of this manual is that it can be used in a number of locations as long as all necessary professionals are available. The success of this program manual will be recognized through the subjective information and through data changes in the initial and final assessments. Another way of determining the success of the program manual is to find out if there has been a decrease in the number of falls among the older adults.

This scholarly project was developed using the Ecological Model of Occupations (EMO). This model best fits the project as it addresses the person, task, context, and performance. The interventions are also based upon the EMO as prevent, adapt/modify, and establish/restore were all used in the development of the falls prevention program manual. This program is considered to be client-centered as it uses techniques that allow each person to apply what is learned to their own contexts. This model does not focus on changing the person but rather changing how they perform in their environment. The goal of the program does not attempt to change the person but takes into consideration several aspects of each person as well as their performance in a variety of contexts.

The following chapters include the literature review, the methodologies, the product, and the summary. The literature review is composed of current research, literature, and information on falls prevention in the older adult population. This was used as a guide to develop the Falls Prevention Program Manual. The methodologies chapter includes the description of the process and methodology used to design the product. Chapter IV contains the entire falls prevention program manual as well as instructions for professionals to implement the program. The final chapter is a summary of the purpose and a brief overview of the scholarly project, limitations, and recommendations for future development of a falls prevention program.

CHAPTER II

REVIEW OF LITERATURE

Chapter II is organized and composed of literature, current research, and background information on the topic of falls prevention for the community-dwelling older adult population. The following pages will address statistical information, fall risk factors, common diagnoses associated with falls, fall-related assessments, intervention techniques, current fall prevention programs, and occupational therapy's (OTs) role in the prevention of falls. Currently, there is a large amount of literature and research studies completed that are related to falls in the older adult community. The information presented below highlights the literature reviewed and how a falls prevention program will benefit from OT.

Literature suggested falls decrease functional independence in the community-dwelling older adult population (Stevens & Sogolow, 2008). The community-dwelling older adult population can benefit from educational sessions to learn fall prevention strategies. In turn, this may decrease the number of falls, injuries, and fear among the community-dwelling older adults. Senior Citizen Centers (SCC) offer educational programs and services that encourage healthy and independent lifestyles for the community-dwelling older adult population. A falls prevention program is one program that could be implemented in a SCC. Literature suggested this program could potentially lower the risk of falls in community-dwelling older adults. Prior to developing this

program it is important to understand the literature and need for a falls prevention program for the community-dwelling older adults.

Aging in place is a national initiative to help keep the older adult population in their own homes longer by providing publications, research, leadership training, and workshops. The most serious barrier to aging in place for community-dwelling older adults is falls. A multidisciplinary falls prevention program is one intervention that may significantly contribute to helping seniors age in place by enabling them to stay safe within their own home (Aging in Place Initiative, n.d.).

The leading cause of injury related deaths among the older adults are falls (Centers for Disease Control and Prevention [CDC], 2008). "Falls are the leading cause of injury-related death, and the third leading cause of poor health among persons aged 65 years and older" (Scheffer, Schuurmans, Van Dijk, Van Der Hooft, & De Rooi, 2008, p. 19). In the same study, the authors stated that over fifty percent of persons with a fear of falling did not actually experience a fall. The same study also expressed a fear of falling as a major health problem because it is associated with decreased socialization and physical activity, avoidance of activities, depression, and a lower quality of life.

Falls have a major impact on the independence of the older adult population aged 65 years and older (Stevens & Sogolow, 2008). Approximately one-third of the older adult population living in the community falls each year (Rubenstein & Josephson, 2006; Filiatrault et al., 2007; Nikolaus & Bach, 2003). Falls are one of the leading causes of mortality and morbidity as well as premature nursing home admission and reduced functioning (Laybourne, Biggs, & Martin, 2008; Rubenstein & Josephson, 2006). It is estimated that by the year 2020, four million older Americans will fall each year (Russell,

Hill, Blackberry, Day, & Dharmage, 2006). The leading cause of injury-related deaths and emergency department visits for people aged 65 and older are unintentional falls (Shumway-Cook et al., 2007; MacCulloch, Gardner, & Bonner, 2007; Shandro, Spain, & Dicker, 2007; Thomas, Stevens, Sarmiento, & Wald, 2005). Among the older adult population, about one in ten falls has an outcome of a serious injury such as hip fractures and head injuries (CDC, 2008; MacCulloch et al., 2007). According to Stevens, Corso, Finkelstein, and Miller (2006), fall-related deaths in the United States have increased significantly over the past the ten years.

While considering the increase in falls, it is important to explore risk factors that contribute to falls. Some of the risk factors include: aging, fear of falling, environmental hazards, decreased cognition, decreased vision, and medication use. The literature suggested that the cause of a fall is likely due to two or more risk factors combined (CDC, 2008).

Aging is a major risk factor that contributes to falling. Literature indicated that falls occur more often in the older adult population. This can be due to the increase of age and associated conditions with aging. Age associated risk factors include: loss of vision and hearing, decreased strength, mobility, endurance, balance, and increased medication use (CDC, 2008).

Fear of falling (FOF) is another risk factor that can have a major impact on falling in the older adult population (Brouwer, Musselman, & Culham, 2004; Scheffer, Schuurmans, Van Dijk, Van Der Hooft, & De Rooij, 2008). Literature indicated that people who have a FOF actually increase their risk of falling (Scheffer et al., 2008). FOF causes the person to restrict their activity level and participation resulting in a decreased

quality of life (Brouwer et al., 2004; Scheffer et al., 2008). In a study done by Murphy and Tickle-Degnen (2001), the authors researched the pattern of participation in daily living tasks by older adults who have a FOF. The results indicated that older adults who restrict their activity did so due to their fear of falling during activity. The authors stated that the higher the fall risk in a certain activity, the less participation in the activity. Furthermore, a study found that "being alone for long periods of time during the day was a significant predictor for restriction of activity as a result of fear of falling" (Fletcher & Hirdes, 2004, p. 276). The authors also found that females were more likely to decrease participation in activity due to FOF. The main risk factors for FOF were found to be having at least one fall in the past, being female, as well as being older (Scheffer et al., 2008; Deshpande et al., 2008; Van Haastregt, Rixt Zijlstra, Van Rossum, Van Eijk, & Kempen, 2008). The consequences from FOF were a decrease in physical and mental performance, increase risk of falling, and loss of quality of life (Scheffer et al., 2008). Findings in one study highlighted "the need for intervention to encourage older adults to continue to be physically active despite fear of falling" (Deshpande et al., 2008, p. 619).

FOF not only limits older adult's participation in activities, but Van Haastregt, Rixt Zijlstra, Van Rossum, Van Eijk, and Kempen (2008) also determined that FOF causes depression and anxiety, therefore lowering the individual's quality of life. The study results suggested that individuals who are anxious were more likely to avoid activities, whereas, symptoms of depression correlated more with the severe fear of falling. The authors indicated that professional care providers who treat older adults who have fear of falling should also assess depression or anxiety.

Another contributing factor that increases risk of falls in the older adult population is environmental hazards. Pardessus et al. (2002) suggested that home hazards such as low lighting, inadequate bathroom railings, exposed cords, clutter, and rugs are responsible for 35% to 45% of falls among older adults. Some of the causes in falls among older adults are tripping hazards, poor lighting, and the lack of assistive devices in areas such as the bathroom. Grab bars, walk in showers, railings, and ramps are all possible assistive devices that can make the home a safer environment for older adults (CDC, 2008). Wyman et al. (2007) found that all the homes included in the study had modifiable environmental hazards. The same study suggested that safety devices should be installed into the homes of elderly women in order to help reduce the number of falls. Stevens, Holman, and Bennett (2001) suggested that all the homes had at least one modifiable hazard, and the most common hazards were rugs and mats scattered on the floor, steps, stopovers, slippery floors, low lighting, and trailing cords. Literature suggested that identifying and modifying homes can potentially make them safer (Nikolaus & Bach, 2003).

Cognition is another identified risk factor that may increase the risk of falling among community-dwelling older adults. Sattin (1992) found that senior citizens fall for multiple reasons. Some of the reasons may be physical, environmental, social, and/or functional capacity of the individual. However, there is limited research stating that cognition plays a role as a risk factor of falls in community-dwelling older adults. In a study done by Chronister (2004), the author suggested that cognition could be one of the most important issues needing to be addressed. Cognition is an area that is affected by natural aging, and in the same study, authors stated that balance is affected by the loss of

attention, which essentially is cognition. This may be noted as a person is walking down the street and they come upon a change of environment. At this point, it is necessary for their cognitive processing to work properly in order to keep them safe as they encounter environmental obstacles. Chronister (2004) also stated that the older adults are at a greater risk for falling if there are other diagnoses or cognitive problems. Fall prevention programs are beneficial; however, Chronister (2004) reported that cognition is the missing component and should be included for the prevention of falls.

Vision is another factor that may increase the risk of falling. There is an increased chance of falling in those who are not wearing the correct glasses or contact lenses and in those who have limited vision due to specific eye conditions (CDC, 2008). Lord (2006), indicated that the chances of falling are increased due to poor vision resulting in postural instability. In the same study, it is indicated that the strongest risk factor for falling is impaired depth perception. Age associated vision changes are common fall risk factors in the older adult population and can cause balance problems (CDC, 2008). Vision is an important area to incorporate when developing a falls prevention program due to the increased chances of falling caused by several different vision deficits. Lord (2006) suggested interventions such as regular eye examinations and the correction of existing eye problems or disorders can potentially help prevent falls in community-dwelling older adults.

Many older adults take medications; however, they may be unaware that medication side effects can increase their risk of falling (CDC, 2008). According to CDC (2008) the risk of falling is associated with the number of prescriptions and over-the-counter medications. Aging has an impact on the way medications are absorbed,

distributed, metabolized, eliminated, as well as increased sensitivity. Medication side effects that may increase the risk of falling are: confusion, impaired judgment, hypotension, lightheadedness, dizziness, delirium, anxiety, decreased alertness, and blurred vision. Fall risk is increased by psychoactive medications, which are drugs that change brain function. These include anti-anxiety drugs, tranquilizers, antipsychotics, antidepressants, and sleep medications. The literature recommended that older adults have a regular scheduled medication review completed by healthcare providers to assist in reducing risk factors for falling. According to Kelly et al. (2003), falls were significantly related to seven specific classes of medications. These medication classes were: narcotics, anti-convolsants, anti-depressants, anti-psychotics, sedatives, anti-coagulants, and anti-parkinsonian agents. The authors also indicated that patients taking narcotic, anti-convulsant, and anti-depressant medications were more likely to have a fall causing an injury.

Falls are associated with an increase in age, the number of health conditions, and number of intrinsic factors that are present. There are many medical problems that may affect balance and mobility that can increase the risk of falling. The common diagnoses that are associated with the risk of falling are the following: visual disorders, neurological disorders, cardiovascular disorders, musculoskeletal disorders, and psychological disorders (Tideiksaar, 2001).

Visual disorders increase the risk of falling by causing balance and tripping hazards (CDC, 2008). Age associated visual impairments such as macular degeneration, cataracts, and glaucoma, interfere with functional abilities and increase risk of falling (CDC, 2008). A decline in visual perception makes it difficult for the individual to

perceive an object in the environment, therefore, increases the risk of falling (Tideiksaar, 2001). Visual diagnoses can be managed and can assist to minimize visual loss with the correct treatment. Older adults are encouraged to have regular vision exams to diagnose conditions earlier and help minimize vision loss (CDC, 2008).

Visual disorders are not the only diagnoses commonly associated with falls; neurological disorders also have a major impact on the factors that increase risk of falling. Nevitt (1997) stated that neurological disorders such as stroke, Parkinson's disease, dementia, cervical degeneration, and neuropathy are associated with falling in older people (as cited in Tideiksaar, 2001). Tideiksaar (1998) suggested that many of the neurological disorders affect gait patterns, postural instability, and impair proprioception (as cited in Tideiksaar, 2001).

Other common diagnoses associated with falling are cardiovascular disorders that include cardiac arrhythmias, cardiac sinus node disease, and abnormalities in blood pressure regulation. Cardiovascular disorder symptoms are often syncope, dizziness, postural or orthostatic hypotension, and extremely fast or slow heart rates which all increase the risk of falling (Tideiksaar, 2001).

Musculoskeletal disorders are also associated with the risk of falling due to the symptoms that impair gait and cause difficulties with transfers. Common musculoskeletal disorders are osteoarthritis and muscle weakness resulting from hypokalemia, polymyalgia rheumatica, or thyroid disease. Changes occur in posture as a person ages due to calcification of tendons and ligaments as well as flattening of vertebral disks. Therefore, the head is flexed at the neck and the trunk is flexed forward causing a change

in the center of gravity. The movement of the center of gravity forward causes the older adult to lose balance and increases the risk for falling (Tideiksaar, 2001).

Psychological disorders are also commonly associated with increased risk of falling in the older adult population. Downton (1998) and Tideiksaar (1997) suggested that disorders such as depression may lead to decreased concentration, impaired judgment, and misperception of the environmental hazards (as cited in Tideiksaar, 2001). Older adults may restrict their activity due to the fear of falling (Deshpande et al., 2008) even though they may be able to perform the activity (Fletcher & Hirdes, 2004). Symptoms of depression and anxiety occur more often in older adults who had severe fear falling and/or avoidance of activity than those who did not (Van Haastregt, Rixt Zijlstra, Van Rossum, Van Eijk, & Kempen, 2008).

In order to accurately determine fall risk factors, one should become familiar with assessments. The literature indicated that there are many evaluations available for assessing falls in the older adult population. Mitty and Flores (2007), stated that the Get Up and Go Test is a quick screening tool used to determine if the individual is at risk for falling. If the person who administers the Get Up and Go Test does not observe any unsteadiness or difficulty with the test, it is then assumed that they are not at risk for falling. The participant can be further examined by timing the participant using this screen tool. This screening tool can be further examined by timing the participant. If the individual is unsteady, has difficulty, or takes longer than the average 7 -10 seconds, they should be considered for further assessment. Mitty and Flores (2007) recommended that the Tinetti Gait and Balance Test be used. This full evaluation test is used to assess stationary, dynamic sitting, standing balance, and ambulation. The Tinetti Gait and

Balance Test is considered to be a better predictor of falls than The Get Up and Go Test (Mitty & Flores, 2007).

Cognitive assessments are also available and can assist to determine if individuals are at risk for falling. According to Lookabaugh-Deur and Esdale (2004), OTs can administer the Mini-Mental Exam, Trail-making, and the Short Blessed Test to indicate possible cognitive deficits. Each of these assessments is quickly administered to determine memory loss, cognitive decline, and confusion. Other cognitive assessments described from North Dakota Occupational Therapy Association (2008) are: Geriatric Depression Scale, Global Deterioration Scale (GDS), Barthel Index, Reality Comprehension Clock Test (RCCT), Kohlman Evaluation of Living Skills (KELS), Cognitive Performance Test (CPT), The Cognitive Assessment of Minnesota (CAM), Allen Cognitive Levels, and the Kitchen Task Assessment (KTA). The purposes of these assessments are to rate the level of depression, assess cognitive impairments, and to determine the functional status of older adults. The assessments can be used by OTs to determine if there are any cognitive risk factors that contribute to the risk for falling.

OTs are also qualified to complete basic vision screenings. Although OTs can screen for deficits, the OT cannot diagnose a visual deficit. The therapist should describe the deficit and prepare questions for a more comprehensive screen by an ophthalmologist or optometrist (CDC. 2008). CDC (2008) recommends that older adults should complete a vision assessment at least every two years and more often if there are preexisting eye conditions. OTs can complete visual screenings to examine visual acuity, visual fields, and oculomotor control. Simon, Aminoff, and Greenberg (1999) explained the most common way to determine an individual's visual acuity is by using the letter chart (as

cited in Quintana, 2008). The visual acuity is determined by the distance of the person from the chart and ability to recognize the letters. The therapist can test near and far acuity. To screen for visual field deficits, confrontation is the most common test used. Confrontation is done by covering one of the person's eyes while comparing the visual field to the normal visual fields (Simon, Aminoff, & Greenberg, 1999; as cited in Quintana, 2008). Warren (1999) indicated that watching the person walk through an area and move objects or interact with the environment is another way to test for a visual field cut (as cited in Quintana, 2008).

OTs have a role in screening for oculomotor control function, but are not able to diagnosis the visual deficit. Oculomotor control screenings are done to determine deficits in the following areas: eye alignment, convergence, accommodation, visual tracking, and saccades (Warren, 1993; as cited in Quintana, 2008). Each of these areas has a specific screening to determine if there are any deficits in oculomotor function. Eye alignment is measured by the reflection of a light on the cornea. The therapist uses light reflection to determine if the reflection is on the same location on both eyes. To test eye convergence, the therapist uses a target and moves the target slowly toward and away from the individuals face while observing the eyes to note if either eye drifts out during convergence. Accommodation occurs when an individual focuses vision at different distances. This is known to decrease as a person ages. The therapist observes the individual's actions and listens to the client's complaints to determine if there are difficulties with accommodation. Visual tracking is another area that may decrease as a person ages. Visual tracking is the ability for a person to track a moving object or target. Visual tracking is screened by watching the eye movements as the therapist has the client

follow a moving target. Lastly, the OT can screen to determine if the client has a deficit with saccades. Saccades are the ability to quickly change fixation from one object to another, which allows an individual to redirect line of sight. Saccades are screened when the client looks quickly between two targets to observe the client's ability to complete the task, accuracy, and head movement (Quintana, 2008).

Other fall risk assessments may be used to measure the FOF in an older adult. Tinetti, Richman, and Powell (1990) developed the Falls Efficacy Scale (FES). This scale measures a person's confidence level during a variety of activities of daily living without falling. Yardley et al. (2005) developed a modified Falls Efficacy Scale-International (FES-I). The authors stated this modified version has better prediction about the concern with falling. The authors completed a study comparing the FES to the FES-I and results revealed the modified version assessed more demanding physical activities and had showed reliability. Later, Kempen et al. (2008) developed a shortened version of the Falls Efficacy Scale (Falls Efficacy Scale–International (FES-I)). This is a 7-item questionnaire that was developed to assess FOF in older adults related to the activities outside of the home and social activities. Kempen et al. (2008) recommended that if the person who administers the test would like to find out more specific detail about FOF, the full FES-I should be used. Hotchkiss et al. (2004) suggested that the FES is used as the best predictor to identify individuals who restrict activity due to FOF.

Environmental assessments can identify hazards that could contribute to falls. Home safety assessments and checklists can be completed to identify possible factors that increase the risk of falling (CDC, 2008). However, if an individual does not feel comfortable completing a checklist, occupational therapists (OTs) are available to

complete a home assessment. OTs are trained in completing a home assessment to determine and identify environmental hazards and make recommendations for a safer environment to reduce the risk of falling. Two of the assessments that are available for home modifications are A Home Fall Prevention Checklist and a standardized assessment called *Westmead Home Safety* Assessment form (CDC, 2008; Cumming et al., 1999). The same authors also described these two assessments and found that the individuals who had completed a home evaluation with an OT had reduced fall rates by one-third. The individuals who had a reduction in the number of falls were those who had experienced a fall in the past year. A third home assessment developed specifically by an OT is the EASE® software program. The purpose of the EASE® software is to provide customized information to help older adults live as safely and independently in their own homes as long as possible. EASE® software was developed to identify an older adult's functional abilities, provide a home checklist with ideas and solutions, provide instant reports, and identify where the products can be found. The software program is divided into categories addressing environmental modification for sensory changes, physical changes, and cognitive difficulties (Lifease, 2002).

Overall, the above listed assessments can be used to determine fall risk for community-dwelling older adults. The areas that can be assessed to assist in determining fall risk are: balance, cognition, vision, fear of falling, activity avoidance, and the environment. OTs are well educated and trained to administer assessments related to falls. They have an important role in ensuring safety in the community-dwelling older adults. According to Mitty and Flores (2007), it is important for each older adult to be tested annually to determine if they are at risk for falling.

There have been a number of interventions used in the prevention of falls. Literature has indicated that multifactorial interventions consisting of exercise, home modifications, and education have been the most beneficial (Clemson et al., 2004; Gates, Lamb, Fisher, Cooke, & Carter, 2008; Wagner et al., 1994). In the same studies, there is evidence that shows a reduction in the number of falls and fall related injuries among older adults following participation in a comprehensive falls prevention program. The literature indicated that studies specifically aimed at reducing fall risk factors significantly decreased the number of falls among the community-dwelling older adults (CDC, 2008). According to Clemson et al. (2004), a program called *Stepping On* consisted of multifactorial interventions including exercise, home modifications, and vision. The results indicated that the fall rate decreased by two-thirds, especially for men. According to CDC (2008), exercises are the only intervention that decreases the number of falls in older adults without another intervention. Exercise has been shown to be an effective intervention for prevention of falls in the community-dwelling older adults (Barnett, Smith, Lord, Williams, & Baumand, 2003; Li et al., 2005). Barnett et al. (2003) completed a study to determine if exercise was an effective intervention to prevent falls. The intervention was exercise classes that focused on balance and coordination, strengthening exercises, and aerobic exercises. The results of the study indicated that people over the age of 65 who were at risk for falling and participated in exercise for one year had reduced their rate of falls and had improved balance. Similarly, Li et al. (2005) found that exercise in the form of Tai Chi decreased the number of falls, fear of falling, risk for falling, and improved balance in older adults. Exercise is an intervention that is

important to include in a falls prevention program and literature provides several examples of beneficial exercises to reduce the risk of falling.

Even though multifactorial programs are suggested to be most beneficial, each of the interventions listed above have also been important in reducing the number of falls. Home modifications and home safety inspections have also been effective interventions for prevention of falls in the community-dwelling older adults (Nikolaus & Bach, 2003). About half of the falls that take place in the homes of older adults are related to environmental factors such as tripping hazards, poor lighting, and the lack of safety devices (CDC, 2008). To determine whether or not a home environment is safe and free of fall hazards, home hazard assessments have been developed. In one study, the authors suggested that a checklist is one of the better ways to determine the level of safety. The checklist helps identify numerous items such as, the number of steps, rugs and mats, lighting deficiencies, obstacles, bed height, toilet height, and the number of safety devices that are currently being used (Stevens, Holman, & Bennett, 2001). However, the authors of the same study indicated that the best results come from personal advice given to them directly. Another study indicated similar findings. The authors stated a home environment survey was given and was later followed up with a professional meeting to discuss home hazards and recommendations (Wyman et al., 2007). The authors from the same study found that in order to be the most the most effective; the professional must provide and immediately install necessary safety devices. This is because the older adults are not likely to make the changes on their own time. As stated by Pardessus et al. (2002) home hazards are not usually a part of treatment when in the hospital because of the difficulty to assess the hazards without physically going to a person's home. The same

authors found a reduced rate of falls among those individuals who had an OT physically come to their residence for a home visit. A similar study completed by Cumming et al. (1999) indicated that individuals who had completed a home assessment with an OT had reduced fall rates by one-third. The literature reiterated that home modifications are beneficial to the safety of an older adult's home. However, the best results for reducing falls in community-dwelling older adults come from multifactorial interventions that include home modifications as well as other interventions (Nikolaus & Bach, 2003; Campbell & Robertson, 2007).

Education is an important intervention used to reduce the rate of falling. Wyman et al. (2007) described the effectiveness of education to reduce the number of home hazards for older women. The intervention was an evaluation of fall risk, exercise, education, individual counseling, and referrals. The authors found that although education may have been effective, the most effective way to reduce hazards in the home and reduce falls would be to provide and install safety devices. Education cannot be the only intervention used to prevent or reduce the rate of falls. Education should be used as a part of a program in conjunction with other interventions such as exercise and home modifications.

There have been numerous studies completed that determine the effectiveness of falls prevention programs for community-dwelling older adults. The literature indicated that multifactorial programs are the most beneficial in reducing the number of falls in older adults. Below are five effective programs explained in more detail.

The program called *Stepping On* is focused on improving the environment, balance, strength, safety at home and the community, and educates the importance of

visual screenings and medication side effects. An OT facilitates this program. Clemson et al. (2004) found that this program was effective in reducing the fall rate by nearly two-thirds especially in men. *Stepping On* has been found to be effective and requires a PT, OT, low vision expert, nurse, and pharmacist to facilitate the program effectively.

Steady As You Go is a multifactorial program developed to increase the self-efficacy during fall risk in the older adult population (Cheal & Clemson, 2001). This program was modified from a previous existing falls prevention program developed by OTs. The program consists of six sessions focused on integrating the participants into the community through education and community outings. After the program, five participants reported that they felt safer participating in occupation-based activities such as housekeeping, walking, and community mobility.

Another program that has been used to reduce falling in community-dwelling older adults is called *Stay Safe, Stay Active*. Barnett, Smith, Lord, Williams, and Baumand (2003) conducted a study to determine the program's effectiveness. The program consisted of classes addressing balance, coordination, strength, reaction time, and aerobic capacity. The results indicated that the program decreased the number of falls by 40 percent and one-third of the participants were less likely to sustain injuries related to falls.

A Study of Accidental Falls in the Elderly (SAFE) health behavior intervention is a program that was developed to teach older adults how to prevent falls. This program contains four group classes as well as falls prevention exercises each group meeting. The group members were also encouraged to walk at least three times a week. Hornbrook et al. (1994) found that this program resulted in reducing the fall rate by 15 percent.

A multifactorial program called *Stand Up!* was specifically designed for community-dwelling older adults to reduce the rate of falls. This is a twelve-week program that consisted of group exercise, home exercise, and educational classes. A study was done to determine the effectiveness of the program in the reduction of falls for community-dwelling older adults (Filiatrault et al., 2007). The results of the study indicated that the participants' involvement in community-based organizations and activities increased.

The *No Falls Intervention* (NFI) is another multifaceted falls prevention program that has statistically shown a decrease in falls among the older adult population. The NFI program included a group-based exercise program, poor vision improvements, and home modifications. When developing this program, the effectiveness was examined using each of the interventions individually as well as all together. The authors found that exercise alone decreased falls by 20%, but by adding vision improvements and home modifications the number of falls was further decreased. The exercise program consisted of weekly 1-hour classes and home exercises to increase flexibility, strength, and balance. The vision improvements were referring clients to the appropriate eye care centers, and the home hazard reductions were done by the researchers who did a home walk through following a previously made checklist. This program was implemented in community settings and focused on older adults aged 70 and older (Day et al., 2002).

The best results for reducing falls in community-dwelling older adults come from multifactorial interventions that include home modifications as well as other interventions (Nikolaus & Bach, 2003; Campbell & Robertson, 2007). However, literature suggested that when an OT does home visits, falls can be reduced by one third (Cumming et al.,

1999). Cumming et al. (1999) implemented a study to determine the effectiveness of home visits by an OT. The home visit consisted of going to the homes of older adults 65 and older, identifying hazards, and recommending modifications and behavior changes. The assessment used by the OTs was the Westmead Home Safety Assessment form. The OTs also spent time with each individual discussing the home modifications as well as home behaviors and how to avoid unsafe situations. The researchers also completed follow up phone calls made three weeks later to find out what changes had been made and encouraged the individuals to make the changes if not already done.

The State of Washington Department of Community Health completed a falls prevention study. The participants were 453 Washington State older adults 65 and above who participated for 12 months to determine the effectiveness of a best practices model for falls prevention. The interventions implemented consisted of an exercise program, an education program, medications review, referral for medical care, and a home assessment. The authors found that falls were reduced by 25% and the group showed physical functioning improvements after taking part in each of the interventions (CDC, 2008).

OTs are skilled professionals who can aid in the prevention of falls by using a variety of prevention methods in order to create an occupation-based falls prevention program. Peterson and Clemson (2008) stated, "occupational therapy practitioners can use a variety of evidenced-based strategies and approaches to create individualized, multifactorial fall prevention plan designed to reduce fall risk and promote client's safe engagement in valued activities," (p. CE-6). The Well Elderly study conducted by Jackson, Carlson, Mandel, Zemke, and Clark, (1998), suggested that the health risks in

older adults can be reduced through the use of preventative OT. The same authors also indicated that occupations and or the lack of occupations significantly affect the well being of older adults. Peterson and Clemson (2008) suggested that OTs can help in the prevention of falls and promotion of safe engagement in activities through the use of several occupation-based strategies and multifactorial fall prevention plans that include environmental changes, education, and strengthening exercises.

Occupational therapy can be helpful in program development for falls prevention in the older adult population. An educational program is needed in order to provide the most effective instructional methods to reduce the risk and fear of falling. Community-dwelling older adults are at risk for falling and would benefit from a falls prevention program available at SCCs. Despite the decreased awareness in the older adult population pertaining to this topic, OTs have an important role to potentially reduce the risk of falling to prevent future devastating events. The literature review has indicated a need for a falls prevention program in a SCC for the community-dwelling older adults. This will help promote the awareness and provide safety education as well as proper techniques to reduce the risk of falling. The literature review provides evidence to support the activities and methodologies that will be explained in the next chapter.

CHAPTER III

METHODOLOGY

The product described in the following chapter includes a manual that can be used by professionals to lead a multidisciplinary falls prevention program. This is intended to be delivered in a Senior Citizen Center (SCC) for community-dwelling older adults over the course of six weeks. This manual includes step by step instructions to promote successful implementation of the falls prevention. An OT should be the main director of the program implementation as they have the necessary education needed to teach older adults. They are trained in evaluations which include assessment of the person, context, task, and their performance. They can provide home assessments, make modifications, screen for cognitive and vision deficits, and teach safety precautions in order to help the older adults safely age in place while continuing to complete daily occupation-based tasks.

A literature review was conducted between May of 2008 and April of 2009. This was to obtain scientific reading and research to find what has and has not worked in order to prevent falls in community-dwelling older adults. This information was gathered through the use of PubMed, textbooks, AJOT, government handbooks, and the internet. Key words searched included: falls prevention programs, fear of falling, elderly and falling, older adults, falls prevention, older persons, and fall risk factors. Initially, a search for scholarly journal articles that specifically addressed falling, fear of falling, and

previous falls prevention programs was implemented. After a search of literature was completed the literature review was developed and the need for an occupation-based multidisciplinary falls prevention program to decrease the number of falls and improve participation in meaningful occupations was determined.

Literature has indicated that multifactorial interventions have been the most beneficial consisting of exercise, home modifications, and education (Clemson et al. 2004; Gates, Lamb, Fisher, Cooke, & Carter, 2008; Campbell & Robertson, 2007). Therefore, the falls prevention program manual includes a variety of interventions that were developed for older adults. OTs can help in the prevention of falls and promote safe engagement in activities (Peterson & Clemson, 2008). OTs should be the main director as they are trained and educated in evaluating and assessing the person, context, task, and performance.

The Ecological Model of Occupation (EMO) was used as a guide to create the scholarly project of a Falls Prevention Program Manual. This is a client-centered model that focuses on person, task, context, and performance. The goal of the falls prevention program is to decrease the number of falls in community-dwelling older adults in order to allow them to safely age in place. This is intended to be done by changing the physical context and the tasks completed by the older adults on a daily basis. Research has shown a decrease in the older adult's participation and performance in daily tasks due to a fear of falling (Scheffer, Schuurmans, Van Dijk, Van Der Hooft, & De Rooij, 2008). It is important that the professional leader views each older adult participant as an individual with a unique set of variables regarding person, task, context, and performance in order to follow the intended client-centered approach.

The core constructs of the EMO are person, task, context, and performance. This is a client-centered model that fits well with the community-based population as it addresses different contextual environments. This allows the individuals to view themselves in the community and home environments rather than in a medical setting which, in turn, gives a bigger picture and does not just focus on the person. One of the goals of the EMO is to increase a person's performance in tasks that they have difficulties completing or are unable to complete. This goal addresses the prevention of falls in several contexts as it is not uncommon for someone with the fear of falling to decrease their performance in daily life.

When a person has an existing fall risk factor they will be more likely to fall and could potentially benefit from this program. An educational risk factor handout is provided in the manual in order to help the older adults become more aware of what risk factors they may have. A falls screening fair has also been designed to help them manage the risk factors by having professionals screen, monitor, and manage existing deficits. Individual consultation with participants would be available during the falls screening fair as well.

Tasks, as described by EMO, make up performance in occupations and are completed by individuals every day. Tasks may include brushing their teeth, bathing, doing laundry, grocery shopping or any activity that is meaningful to an individual. Completing these tasks depends on a person's variables such as skills, abilities, and interests. Before an individual can complete any task they need an interest in the task. It will also be necessary that the context allows the individual to engage in the chosen task. The manual in the following chapter provides an activity that has several occupations

listed. The activity provides instructions and a demonstration to complete each task safely to prevent falling during the engagement of the task.

Performance, as described by EMO, is the process and result of the individual interacting with the context to engage in tasks. The falls prevention manual addresses the contexts where many community-dwelling older adults engage in their tasks of choice. Falls happen in different contexts and older adults need to be aware of the influence the context has on their performance. The falls prevention program manual was created for the community-dwelling older adults who are living in their own homes. The manual provides a home hazard activity that allows the older adults to learn about environmental contexts. The same activity allows the participants to take home the ideas and recommendations and apply them to their own environment. A Center for Disease Control (CDC) Home Fall Prevention Checklist for Older Adults is also provided to help the participants identify hazards in their own home.

The EMO uses five therapeutic intervention strategies that focus on person, context, and task relationship to support the performance needs of each individual. The intervention types are establish/restore, alter, adapt/modify, prevent, and create. The main interventions used in this scholarly project include prevent, adapt/modify, and establish/restore.

The adapt/modify intervention is incorporated into the program manual through several activities that suggest modifying homes in order to give the older adults safer environments. The older adults are also taught how to modify specific tasks to keep them actively engaged despite a fear of falling or other fall risk factors.

Establish/restore intervention techniques are used in the staying active portion of the manual as the older adults are encouraged to participate in daily exercises and activities. The establish intervention technique is also used as the older adults are educated on new safety skills to allow them to continue to safely participate in meaningful tasks.

This scholarly project was developed using the concepts of the EMO and is supported by the research provided in the literature review. The falls prevention program manual was designed to prevent falls and increase independence and participation in meaningful occupations among the community-dwelling older adult population in order to allow them to safely age in place. The following chapter introduces the product and includes the entire falls prevention program manual that can be used and directed by an OT in SCC.

CHAPTER IV

PRODUCT

This chapter includes the entire product which is *A Falls Prevention Program Manual*. This was developed and is intended for occupational therapists (OTs) to use as a guide for falls prevention programs in Senior Citizen Centers (SCC). The manual includes instructions for professional leaders that can be followed in order to deliver an entire six week program. Each week presents a one hour session. The manual includes instructions, handouts, activities, pictures, and assessments needed to implement each session. The handouts and pictures will be given to the older adult population and will be presented by a professional throughout the course of the six weeks. The goal of the manual is to provide the older adults with the knowledge and skills to prevent future falls using a multidisciplinary approach.

The manual organizes each weekly session according to topics. The topics include: falls prevention education, a screening fair, daily activities, staying active, home safety, and putting it all together. Each week, the session begins with the choice of one out of three warm-up activities and is followed by the weekly topic. The first week is an educational session that includes information provided on handouts about risk factors, professional roles, and what the older adults can do to prevent falls. The second week is a screening fair consisting of several professionals such as physicians, optometrists, pharmacists, physical therapists, and occupational therapists. These professionals will

have booths set up where the older adults can visit to receive information and ask questions. The third week is an educational session about the importance of safety during occupations. There is a handout provided that includes pictures as well as instructions for the leader to give demonstrations on how to safely perform several daily activities. The fourth week provides an in-service about exercising. This will be an opportunity for the older adults to learn about types of exercising and the importance of exercising on a regular basis in order to stay strong and healthy. There will also be time following the in-service for the older adults to consult with fitness leaders and coordinators to potentially set up fitness plans and/or memberships. The fifth week includes information on home safety techniques and activities. A handout will be provided along with directions to assist in completing a home safety activity. Following the activity, a home safety checklist will be provided and the older adults will be encouraged to take it home in order to give themselves safer living environments. The final week of the six week program includes information on the importance of putting the entire program into one large lifestyle change. Handouts will be provided and closing information and awards will be given. The participants will be notified when the next falls prevention program will take place and they will be encouraged to come again.

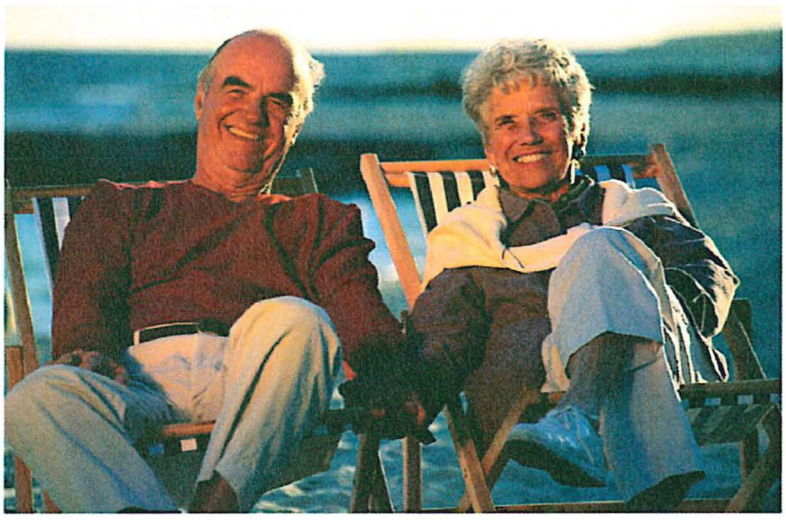
The Ecological Model of Occupation (EMO) was used as a guide in the development of this falls prevention program manual. This model works well with community-based populations because it encourages full participation of all people in their communities. The interventions suggested by the EMO do not just focus on the person but it also addresses the tasks and environments. The EMO addresses the person, task, context, and performance which are integrated into falls prevention program

activities. The goal of the program does not attempt to change the person but considers several aspects of each person as well as their performance in a variety of contexts.

This program manual is intended to be used for those who have a fear of falling, have fallen in the past, and/or would like to learn how to prevent falls for the future. This manual should be utilized by an OT in a SCC where it can be easily accessed by older adults. The goal of the manual is to provide older adults with the knowledge and skills in order to make a lifestyle change and help them to safely and independently age in place.

FALLS PREVENTION Program Manual

Helping Community-Dwelling Older Adults Age in Place



Brittanie Field, Krista Radi, &
Cindy Janssen, MOT, OTR/L

A Falls Prevention Program Manual
Instructions for Professional Leader

Purpose:
The purpose of the Falls Prevention Program Manual is to provide other professionals with an effective program to aid in the prevention of falls in community-dwelling older adults. This manual is used to promote healthy aging in place through the use of meaningful occupations. This was created for professionals to use as a guide to education and implement a falls prevention program at a Senior Citizen Center (SCC). It will also be used by the older adult population as a guide to practice and learn about the prevention of falls.

Justification from Literature:
A literature review determined the need for an occupation-based multidisciplinary falls prevention program to decrease the number of falls and improve participation in meaningful occupations.

Model:
A falls prevention program manual was designed according to the Ecological Model of Occupation as it is important to focus on the person, context, and task when preventing falls.

Organization:
The manual was designed to be used and led by other professionals in a Senior Citizen Center. It is broken down in to 6 weeks and each week contains a description of how the session should be relayed to the program participants.

How to Use the Manual:
The manual is divided into 6 weeks with instructions for the professional leader to follow. The instructional sheets are those with the teal border and are titled, "Instructions for Professional Leader." The rest of the week consists of handouts or activities that can be printed and given to the participants. The best way to implement the program is to follow the week-by-week instructions provided for the professional leader. There is an appendix in the back of the manual where additional handouts are located. This includes advertisement for the program, sign in sheets, and consent forms. A CD is located in the front of the manual that includes each of the handouts to allow for printing of the handouts.

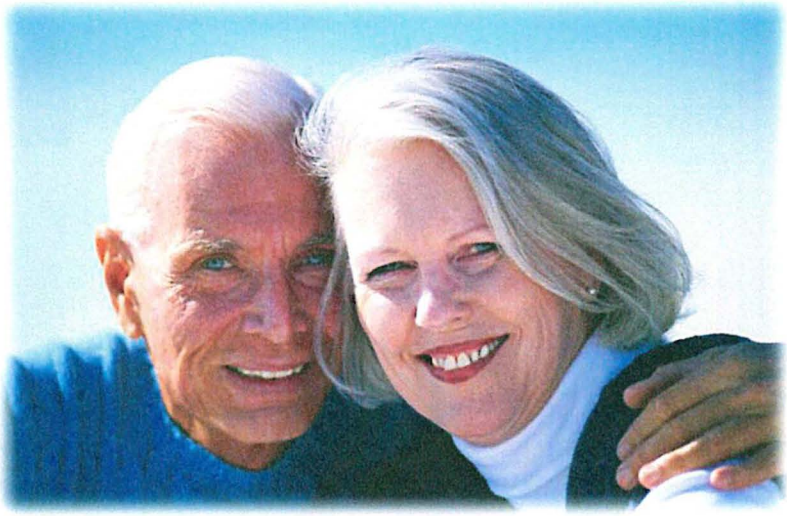
In order to successfully implement this program the entire manual should be read prior to beginning the sessions. This will help with the planning as there are weeks that need additional time to plan and organize.

Components:

- CD
- Instructions for Professional Leaders
- Handouts
- Worksheet
- Home Checklist
- Pictures
- Advertisement Sheets
- Consent Forms
- Sign-in Sheets

Falls Prevention Program
Schedule of Activities

Week 1	Educational Session
Week 2	Screening Fair
Week 3	Daily Activities
Week 4	Staying Active
Week 5	Home Safety
Week 6	Putting it all Together



FALLS PREVENTION Educational Session

Week 1

Week 1

Purpose:
The purpose of week 1 is to obtain initial evaluation data and educate the older adults about fall risk factors. The professional will educate the older adults through the use of activity involvement, lessons, and providing handouts.

Week 1 will consist of:

- Opening activity (choose 1)
  - Reminisce
  - Stand Up
  - Falls Prevention Bingo
- Initial Evaluation
  - Tinetti Gait and Balance Evaluation
  - Falls Efficacy Scale
- Handouts
  - Risk Factors
  - Life cycle of a fall
  - What YOU can do
  - Professional Roles

Overview:
One of the 3 provided opening activities should be completed. Make sure each participant has signed the sign-in sheet and the rewards system should be described to the participants. Two evaluations will be completed in order to determine beginning objective data regarding balance and fear of falling in the older adult participants. The educational session will be an hour long and should begin with educating the older adults about risk factors, life cycle of a fall, what you can do, and professional roles. In the following section, there are handouts that can be printed and given to the participants to help guide them through the educational session. The professional documents are titled "Instructions for Professional Leader" and have a teal line under the title. The handouts for the older adults are printed in a larger font. Make sure the professional leader introduces the next week topic and encourages participants to return. Make any necessary announcements about scheduling and location of next session.

Reminder:
Week 2 is a screening fair where several professionals need to be contacted to establish a date and time for the screening fair. Be sure to do this in a timely manner.

Opening Activity
Instructions for Professional Leader

Choose 1 warm-up activity from the list below to get the older adults engaged in the session.

1) **Reminisce**

Purpose: to involve the older adults in an icebreaker activity to learn about each other and their experience with falls.

Activity: ask the participants to get into small groups or discuss with the person next to them.
Have them answer the following questions.

- What is your name and where are your from?
- What are your hobbies or the things you do for fun?
- Have you ever fallen or know someone who has fallen?
    - How has this impacted your/their life?
- What do hope to gain from this program?

2) **Stand Up**

Purpose: to learn each person's name and create a quick icebreaker activity before educating the older adults about prevention of falls.

Activity: ask the participants to stand up (if they are able to) and introduce themselves and tell the rest of the group something interesting about themselves.

3) **Falls Prevention BINGO**

Purpose: to engage the participants in a meaningful activity and introduce the falls prevention terminology.

Activity: use the handout provided and make as many bingo sheets as needed. The leader will play this game with the same rules as the original bingo, but use the falls prevention terminology instead of the numbers. Once a participant wins, a reward system can be used.

Supplies: print provided handouts and give any items for the participants to use to mark off called words on printed bingo sheets.

B	I	N	G	O
Falls	Doctor	Home Safety	Occupation-Based Activity	Nutrition
Medication	Exercise	Vision	Annual Check-Ups	Use Adequate Lighting
Fitness Consultation	Prevention	Fear	Remove Throw Rugs	Optometrist
Swimming	Community Involvement	Nurse	Physical Therapy	Hydration
Occupational Therapy	Pharmacist	Staying Active	Walking	Keep Moving

Instructions for Professional Leader

Use this to make copies and cut apart in order to call off the BINGO names. For example, B: Falls, N: Vision and so on. A copy will need to be made of the actual BINGO card and additional cards with need to be made with the words mixed up.

Falls	Doctor	Home Safety	Occupation -Based Activity	Nutrition
Medication	Exercise	Vision	Annual Check-Ups	Use Adequate Lighting
Fitness Consultations	Prevention	Fear	Remove Throw Rugs	Optometrist
Swimming	Community Involvement	Nurse	Physical Therapy	Hydration
Occupational Therapy	Pharmacist	Staying Active	Walking	Keep Moving

Initial Evaluation
Instructions for Professional Leader

Instructions: Administer the Tinetti Balance and Gait Evaluation and Falls Efficacy Scale to each older adult participant. Both of these assessments will also be given at the completion of this falls prevention program.

Purpose: to obtain objective data from the participants to determine the effectiveness and to record and noticeable changes in the scores of the participants

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Tinetti Gait and Balance Evaluation

Purpose: easy and simple test to administer and measure an older adult's gait and balance.

Time to complete: 10- 15 minutes

Equipment needed: Hard armless chair
Stopwatch or wristwatch
15 ft walkway

Available online at:
http://www.bhps.org.uk/falls/documents/TinettiBalanceAssessment.pdf

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Falls Efficacy Scale (FES)

Purpose: this is a 10-item rating scale to assess confidence in performing daily activities without falling.

Time to complete: Less than 5 minutes

Equipment needed: Questionnaire or the survey

Available online at:
http://www.fallpreventiontaskforce.org/pdf/FallsEfficacyScale.pdf

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Risk Factors

- **Common Diagnoses (not limited to)**
  - Visual disorders - Glaucoma, Cataracts
  - Neurological disorders – Stroke, Parkinson's Disease
  - Cardiovascular disorders – Abnormal blood pressure
  - Musculoskeletal disorders – Arthritis
  - Psychological disorders – Depression, Anxiety

- **Aging**
  - Decline in – strength, balance, vision, cognition

- **Fear of Falling**
  - Decline in participation in activities
  - Increase in loneliness, depression, isolation

- **Environmental Hazards**
  - Home – poor lighting, tripping hazards
  - Outside – terrain changes, weather conditions

- **Medications**
  - Side effects
  - Combinations

Risk Factors
Instructions for Professional Leader

Instructions: Print the Risk Factors Handout and provide each participant with one. This handout will give them written information to follow along with the educational session and to use as an ongoing reminder at home.

Additional information to share during educational session on risk factors:

- Approximately one third of the older adult population living in the community falls each year.
- The leading cause of injury related deaths among the older adults are falls.
- Falls have a major impact on the independence of the older adult population aged 65 years and older.
- It is estimated that by the year 2020, four million older Americans will fall each year.

1) Common Diagnoses

Visual Disorders

- Visual loss and visual impairments severely increase the risk of falling by causing balance and tripping hazards.
- Conditions such as macular degeneration, cataracts, and glaucoma impair visual function.
- A decline in visual perception makes it difficult for the individual to perceive an object in the environment therefore, increases the risk of falling.
- Visual diagnoses can be managed and can assist to minimize visual loss with the correct treatment.
- Older adults are encouraged to have regular vision exams to diagnose conditions earlier and help minimize vision loss.

Neurological Disorders

- Neurological disorders such as stroke, Parkinson's disease, dementia, cervical degeneration, and neuropathy are associated with falling in older people.
- Many of the neurological disorders affect gait patterns, postural instability, and impair proprioception.

Cardiovascular Disorders

- Cardiovascular disorder symptoms are often syncope, dizziness, postural or orthostatic hypotension, and extremely fast or slow heart rates which all increase the risk of falling.
- Cardiovascular disorders include cardiac arrhythmias, cardiac sinus node disease, and abnormalities in blood pressure regulation.

Musculoskeletal Disorders

- Musculoskeletal disorders may impair gait and cause difficulties with transfers.
- Common musculoskeletal disorders are osteoarthritis and muscle weakness resulting from hypokalemia, polymyalgia rheumatica, or thyroid disease.

Psychological Disorders

- Disorders such as depression may lead to decreased concentration, impaired judgment, and misperception of the environmental hazards.
- Older adults may restrict their activity due to the fear of falling, even though they may be able to perform the activity.
- Symptoms of depression and anxiety occur more often in older adults who had severe fear falling and/or avoidance of activity than those who did not.

2) Aging

- Falls occur more often in the older adult population. This can be due to the increase of age and associated conditions with aging.
- Age associated risk factors include: loss of vision and hearing, decreased strength, mobility, endurance, balance, and increased medication use.
- Changes occur in posture as a person ages due to calcification of tendons and ligaments as well as flattening of vertebral disks. Therefore, the head is flexed at the neck and the trunk is flexed forward causing a change in the center of gravity.
- The movement of the center of gravity forward causes the older adult to lose balance and increases the risk for falling

3) Fear of Falling

- Encourage the older adults to continue to be physically active despite fear of falling!
- Individuals who have a FOF actually increase their risk of falling.
- FOF causes the person to restrict their activity level and participation resulting in a decreased quality of life.

4) Environmental Hazards

- Home hazards such as low lighting, inadequate bathroom railings, exposed cords, clutter, and rugs are responsible for 35% to 45% of falls among older adults.
- Some of the causes are tripping hazards, poor lighting, and the lack of assistive devices in areas such as the bathroom.
- Grab bars, walk in showers, railings, and ramps are all possible assistive devices that can make the home a safer environment.

5) Medications

- Many older adults take medications; however, they may be unaware that medication side effects can increase their risk of falling.
- The risk of falling is associated with the number of prescriptions and over-the-counter medications.
- Aging has an impact on the way medications are absorbed, distributed, metabolized, eliminated, as well as increased sensitivity.
- Medication side effects that may increase the risk of falling are: confusion, impaired judgment, hypotension, lightheadedness, dizziness, delirium, anxiety, decreased alertness, and blurred vision.
- Fall risk is increased by psychoactive medications, which are drugs that change brain function. These include anti-anxiety drugs, tranquilizers, antipsychotics, antidepressants, and sleep medications.
- Older adults are recommended to complete medication review by healthcare providers such as a pharmacist to assist in reducing the risk for falling.

Impact of Falling

Adapted from Allison Rutz & Cindy Janssen, MOT, OTR/L (2009)

Impact of Falls
Instructions for Professional Leader

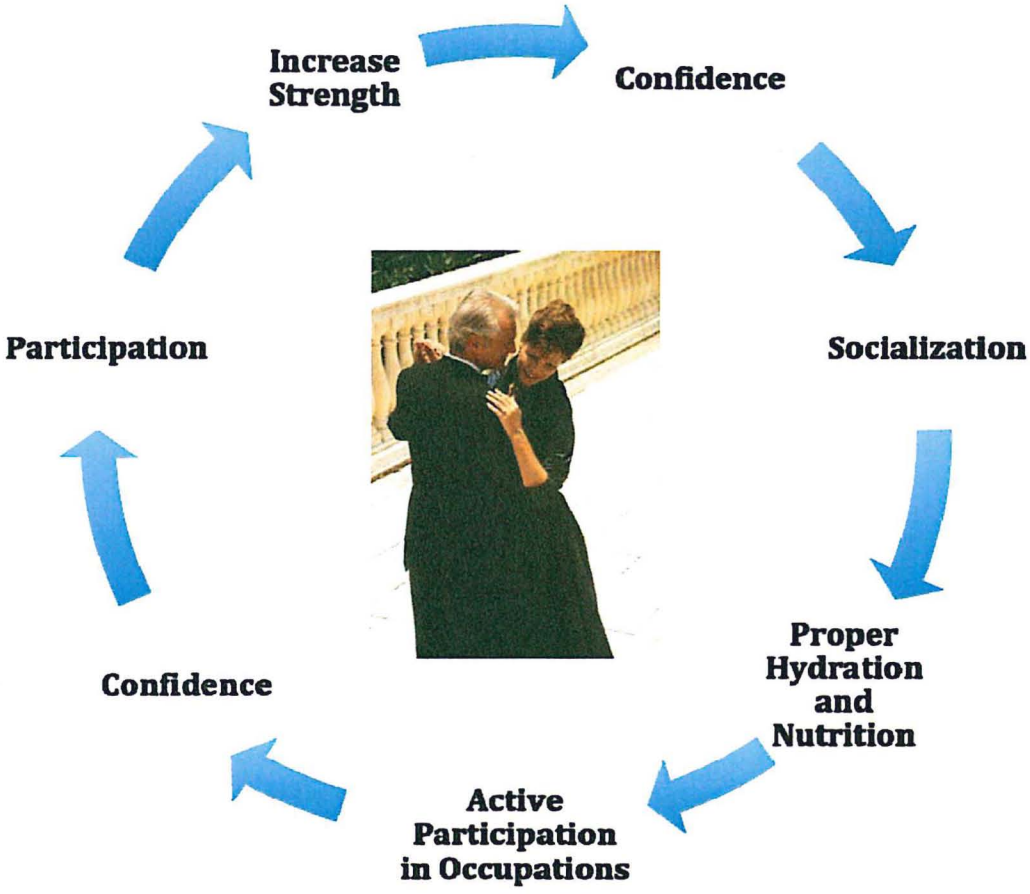
Instructions: Print the Impact of Falls Handout and provide each participant with one. This handout will give the participants a visual aide to follow along with during the educational session and can be taken home with them to be used as an ongoing reminder.

The impact of falls is a continuous cycle that leads to an increase in the risk of falling. The cycle may start at any point depending on each person.

How to describe the continuous cycle:

- Weakness is a part of aging and can result from a decrease in activity.
- When individuals are weak, the chances of falling increase.
- Once an older adult falls, they can develop a fear of falling.
- When a person has a fear of falling, they can decrease participation in activities (exercise, going out in the community, home care, etc.)
- By not keeping up activity level, health may decrease by becoming dehydrated or not getting the proper nutrition.
- Due to decrease participation and a decrease in health, one is not as likely to go out in the community and socialize with other individuals.
- When an older adult does not participate in socialization, this can lead to loneliness.

Impact of Participation



Adapted from Allison Rutz & Cindy Janssen, MOT, OTR/L (2009)

Impact of Participation
Instructions for Professional Leader

Instructions: Print the Impact of Participation Handout and provide each participant with one. This handout will give the participants a visual aide to follow along with during the educational session and can be taken home with them to be used as an ongoing reminder.

The impact of participation is a continuous cycle that shows the positive benefits of participation in daily life activities.

How to describe the continuous cycle:

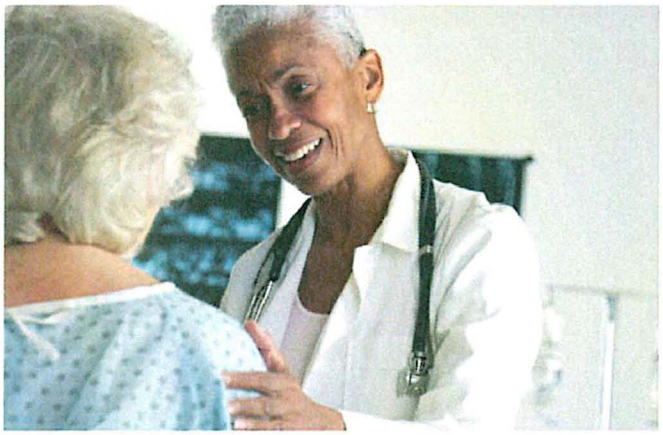
- Participation in daily activities can increase the older adult's confidence in themselves.
- When the adult has an increase in their confidence, they become more likely active in daily activities.
- When the older adult stays active, they are more likely to maintain their health.
- When the older adult stays healthy, the individual is more likely to stay active in the community and socialize with others.
- Increased socialization leads to an increase in confidence.
- When a person becomes more confident, they are more likely to become more active and increase strength.
- and the cycle continues...

What Can YOU Do?

- **See healthcare providers regularly**
- **Make your home safer**
- **Stay active in everyday activities**
- **Begin regular exercise programs**
- **Check medications with healthcare provider**
- **Have your vision checked regularly**
- **Eat healthy and keep hydrated**
- **Make lifestyle change and stick with it**

Professional Roles

- **Physician –** Diagnose, annual check-ups, referrals
- **Nurse –** Head-to-toe nursing assessments, including vitals
- **Occupational Therapist (OT) –** Occupation-based activities, home modifications, cognitive, vision, and balance assessments
- **Physical Therapist (PT) –** Exercise Programs, strengthening
- **Pharmacist –** Medication management
- **Optometrist/Ophthalmologist –** Vision assessments, vision corrections



FALLS PREVENTION

Screening Fair

Week 2

Week 2

Purpose:
The purpose of week 2 is to educate the older adults about the need for a multidisciplinary approach through the use of a screening fair. The screening fair consists of many professions from the community or surrounding areas and will give them an opportunity to be screened or to make appointments for a later date. This will give them an overall picture as to what each profession does to help make the process of aging safer.

Week 2 will consist of:

- Opening activity (choose 1)
  - Stand Up
  - Verbal Survey
  - Tote Bag
- Screening Fair
  - Physical Therapy Booth- Gait and Balance assessments
  - Occupational Therapy Booth- Cognitive screens, home assessments, adaptive equipment needs
  - Optometrist Booth- Vision assessments with referrals as needed
  - Pharmacist Booth- Medications and side effects
  - Physician Booth- Set up appointments for regular exams and ask questions

Overview:
One of the 3 provided opening activities should be completed. Make sure each participant has signed the sign-in sheet. The screening fair may be set up as desired as long as each of the required professionals are present. Each professional should have a booth set up where participants may stop and be educated, screened, provided with handouts, or simply ask questions. As a reminder to each of the professionals who are attending the screening fair, be sure to bring necessary screenings, evaluations, handouts, and anything else that would be beneficial to prevent falls in the older adult population. This will be an informal fair where each of the participants will independently go to each booth or the booths of their choice. Make sure the professional introduces the next week topic and encourages participants to return. Make any necessary announcements about scheduling and location of next session.

Opening Activities
Instructions for Professional Leader

Choose 1 warm-up activity from the list below to get the older adults engaged in the session.

1) Stand Up

Purpose: The purpose is to learn each person's name if there are new people, work on their memory by remembering names, and also to create a quick icebreaker activity before the older adults begin walking around to the different professional booths.

Activity: ask the participants to stand up (if they are able to) and introduce themselves and tell the rest of the group the name of the person sitting next to them and something interesting about that person

2) Verbal Survey

Purpose: to get the older adults thinking about what they have done, medically, in the past to prevent falls and to help them learn what they can be doing to prevent falls in the future, and also to allow the professionals to see whether or not they are having an impact on the older adults

Activity: informally ask the participants questions provided on the following survey sheet and have a few of them share their answers out loud for each of the questions

Supplies: Printed copy of the verbal survey

3) Tote Bag

Purpose: to get each older adult to make a reminder list of 5 changes they can make in their day to help prevent a fall for themselves and also to provide each participant a bag to carry the items they receive from the screening fair

Activity: provide each individual with a small tote bag as well as utensils to decorate it with, have each participant decorate their bag as desired and make list of 5 changes they can make today to help prevent falls, when finished have each person share their list out loud and then let them carry their bags throughout the screening to help carry any items they receive from the fair

Supplies: A tote bag for each participant and fabric markers that dry quickly

Verbal Survey
Instructions for Professional Leader

1) Do any of you regularly see a PT, OT, Optometrist, Physician, and/or Pharmacist?

2) How have any of the professionals helped you in the past?

3) What do you think each of them do to help the prevention of falls?

4) Why or why haven't you seen each of these regularly?

5) After learning more specifically what each of them can do for you, will you be more likely to see each of them on a regular basis?

Assessments
Instructions for Professional Leader

Some of the assessments that may be included during the screening fair can be any of following. The screenings or evaluations are not included in this manual and must be obtained on your own.

Tinetti Gait and Balance Evaluation

Purpose: easy and simple test to administer and measure an older person's gait and balance.

Time to complete: 10 – 15 minutes

Equipment needed: Hard armless chair
Stopwatch or wristwatch
15 ft walkway

Available online at:
http://www.bhps.org.uk/falls/documents/TinettiBalanceAssessment.pdf

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Mini Mental State Examination (MMSE)

Purpose: screening instrument used to determine cognitive impairment. The screen has 11 questions and tests five areas of cognitive function: orientation, registration, attention and calculation, recall, and language.

Time to complete: 5 – 10 minutes

Available online at:
http://www.chcr.brown.edu/MMSE.PDF

Short Blessed Test (SBT)

Purpose: check or test a person's orientation, memory, or concentration.

Time to complete: approximately 5 minutes

Equipment needed: testing form

Available online at:
http://alzheimer.wustl.edu/About_Us/PDFs/Short%20Blessed%20Test%20-%20Washington%20University%20Version.pdf

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Trail Making

Purpose: tests visual conceptual and visuo motor tracking. Involves motor speed and attention functions to complete.

Time to complete: test scores are based on amount of time to complete the testing forms.

Equipment needed: Stopwatch, pencil, trails A & B forms

Available online at:
http://www.healthcare.uiowa.edu/igec/tools/cognitive/trailMaking.pdf

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Falls Efficacy Scale (FES)

Purpose: this is a 10-item rating scale to assess confidence in performing daily activities without falling.

Time to complete: Less than 5 minutes

Equipment needed: Questionnaire or the survey

Available online at:
http://www.fallpreventiontaskforce.org/pdf/FallsEfficacyScale.pdf

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CDC Home Checklist

Checklist used to identify home hazards and provides suggestions.

Available online at:
http://cdc.gov/HomeandRecreationalSafety/pubs/English/booklet_Eng_desktop-a.pdf

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Berg Balance Scale

Purpose: measure of balance abilities and is used to identify and evaluate balance impairment in the older adult population.

Time to complete: 15 – 20 minutes

Equipment needed: Ruler, two standard chairs (one with arm rests, on without), footstool or step, stopwatch or wristwatch, 15 ft walkway

Available online at:
http://www.aahf.info/pdf/Berg_Balance_Scale.pdf

FALLS PREVENTION
Daily Activities

Week 3

Week 3

Purpose:
The purpose of week 3 is to address each individual's daily routine and to teach them how to increase their activity level and safety while completing regular everyday tasks. This will teach the importance of occupation-based activities and how to stay safe while doing desired and meaningful activities.

Week 3 will consist of:
- Opening activity (choose 1)
    - Occupation-Based Activity Examples
    - Verbal Survey
    - Planting a Flower
- Safety During Occupations
    - Educational Session
    - Demonstration

Overview:
One of the 3 provided opening activities should be completed. Make sure each participant has signed the sign-in sheet. The safety during occupations educational session should be implemented by an occupational therapist. This session should last approximately 45 minutes including a demonstration of the occupations. Each participant should be provided with a handout so they are able to follow along during the educational session. Make sure the professional introduces the next week topic and encourages participants to return. Make any necessary announcements about scheduling and location of next session.

Opening Activities
Instructions for Professional Leader

Choose 1 warm-up activity from the list below to get the older adults engaged in the session.

1) Occupation-Based Activity Examples

Purpose: The purpose is to have the older adults identify meaningful activities that are part of their daily routine. The professional should define what occupation-based activities are. **Occupation-based activity: meaningful activities that people participate in every day life. For example: grooming, cleaning, shopping, cooking, etc.**

Activity: After the professional has given the definition, the participants will be asked to identify at least three occupation-based activities that are part of their daily routine. Once the participants have identified 3 activities, they should share them with the rest of the group. This activity will give them the opportunity to reflect on the activities they participate in and learn about other activities from peers.

2) Verbal Survey

Purpose: The purpose is to get the older adults thinking about what they do during their daily routine and how they can increase the activity level of everyday tasks in order to keep themselves strong.

Activity: informally ask the participants questions provided on the following survey sheet and have a few of them share their answers out loud for each of the questions

Supplies: Printed handout of the survey

3) Planting a Flower

Purpose: The purpose of planting a flower is to show the participants that gardening can be an occupation-based activity. This may also help them in finding a new hobby to keep them healthy and active.

Activity: Each participant will plant a flower in a small cup, decorate the cup with their names and keep it at the facility and will have to take care of it the remainder of the falls prevention program.

Supplies: Cups, Potting soil, several small shovels, flower seeds, and watering cans

Verbal Survey
Instructions for Professional Leader

1) Did you know that your everyday activities are a way of keeping you active and maintaining your strength?

2) What are occupation-based activities?

3) Name at least 5 occupation-based activities that you do on a daily basis?

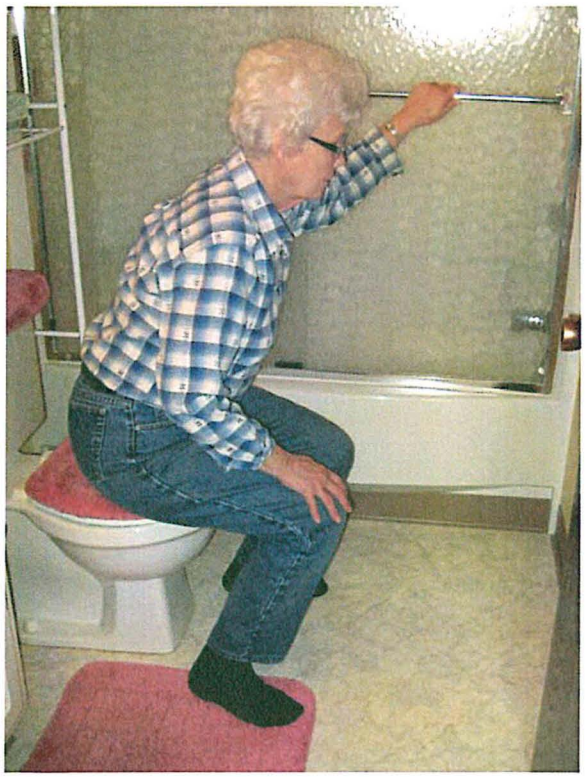
4) How can you modify an occupation-based activity to make it more active or intense?

5) What changes are you planning to make to your daily routine in order to increase occupation-based activities and make them safer?

Safety During Occupations

Bathing/ Showering

- DO NOT use sliding glass doors or towel rack for balance and stability. These were not meant to hold body weight and can be dangerous.
- DO NOT wear socks on bathroom floor (slipping).
- Use an installed grab bar for balance and stability. Make sure the grab bars are at the right height. If you are not sure on placement, talk to a professional. Occupational therapists have the knowledge about placement and necessary bathroom modifications.
- Use a non-slip rubber bath mat to prevent slipping.
- Plan enough time for a bath or shower. Rushing increases your risk of falling.
- Install hand held shower head.



If you balance is poor or legs are weak:

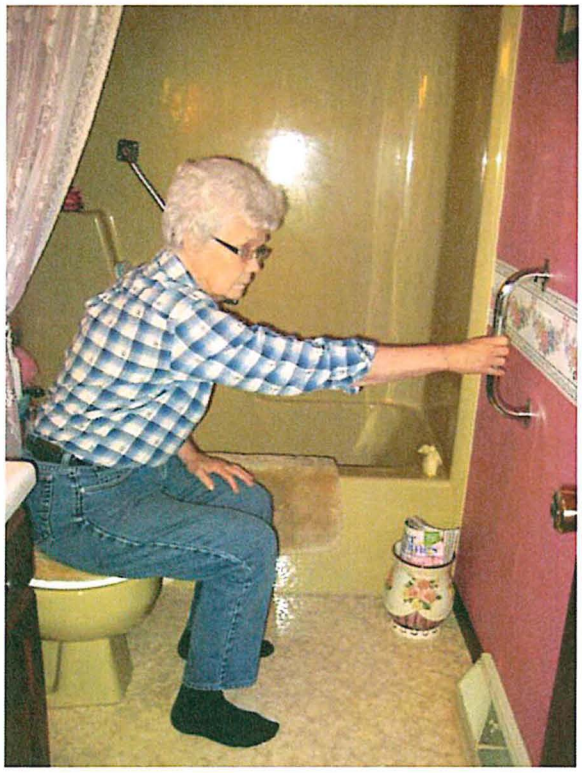
- Purchase a shower chair or bench. Shower chairs provide support and are available with backrest. Shower bench is over the side of the tub and allows the person to slide across tub using arm muscles

Toileting

- Keep toilet paper within easy reach
  - Use a raised toilet seat
  - Use a toilet safety frame
  - Add grab bars near toilet to help with sitting and standing

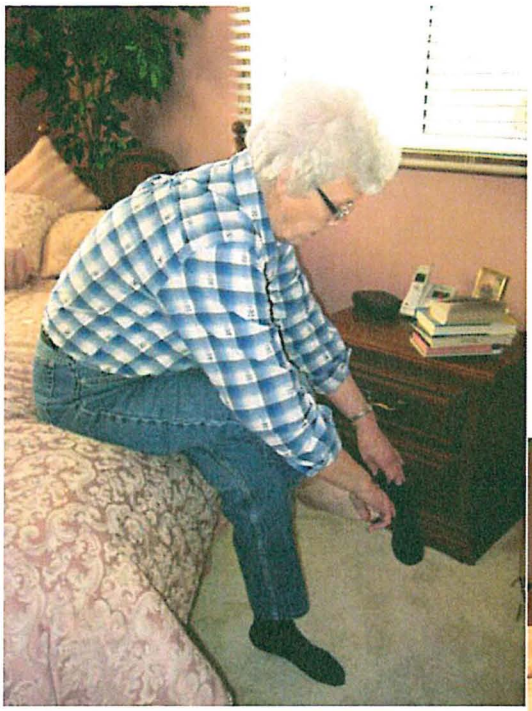
DO NOT: have the toilet paper placed far from the toilet – this can cause the person to reach too far and become unsteady.

DO: use a grab bar to assist with getting up from the toilet. Grab bars are easy to install.



Dressing

- Sit down in a chair to dress for support and balance.
- Avoid bending down if possible
- You can cross your leg over opposite knee to avoid bending to put socks and shoes on
- Dressing aids such as a sock aid, shoe horn, and a reacher can be purchased if you are having any difficulty getting dressed



DO: sit down when you are getting dressed.

DO NOT: stand while getting dressed. This can be dangerous and will increase the chances of losing your balance and causing a fall.

Mobility/community mobility

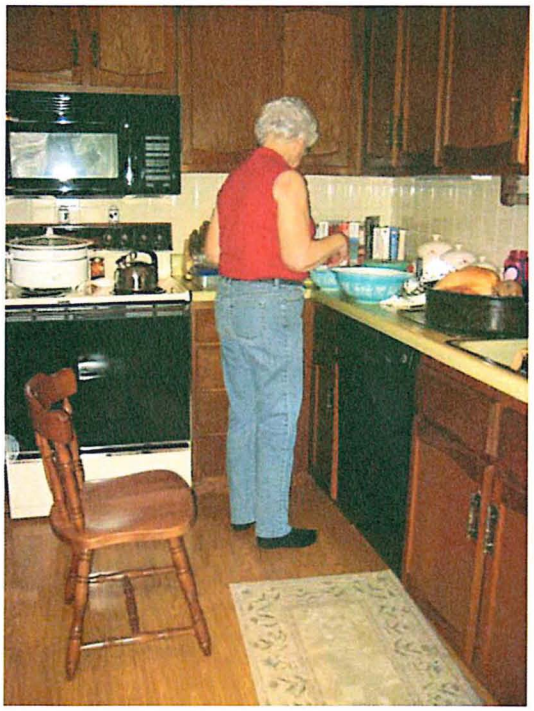
- Always make sure clutter is out of the way to avoid tripping
- Use your walker and cane if you were recommended to use one
- Be cautious about environment (ice, curbs, slippery surfaces, etc), and use aides such as shoe grippers
- Stay in well lit areas
- Always plan ahead to prevent rushing
- Do not carry too much at once no matter where you are walking. More trips and having a free hand to hold a railing is better than filling your hands.
- Always reach back when sitting in a chair and use chairs with armrests when possible

DO NOT: sit down while carrying something in your hands.

DO: use a walker if you are frequently losing your balance or feel unsteady while walking.

Meal Preparation and Cleanup

- Keep commonly used items in an easy to reach place.
- Avoid bending down to low places or reaching to high places.
- Remove throw rugs. Apply non-slip mats or sticky back tap to prevent slipping on rugs.
- Use a roller cart to transfer items in the kitchen to reduce fatigue.
- Put dishes away in small stacks to reduce the number of times of reaching and bending.
- Keep a chair nearby to be able to use if you fatigue
- Keep all cupboards, drawers, and doors closed to reduce hazards



DO: reduce clutter, have seat nearby for safety in case of fatigue.

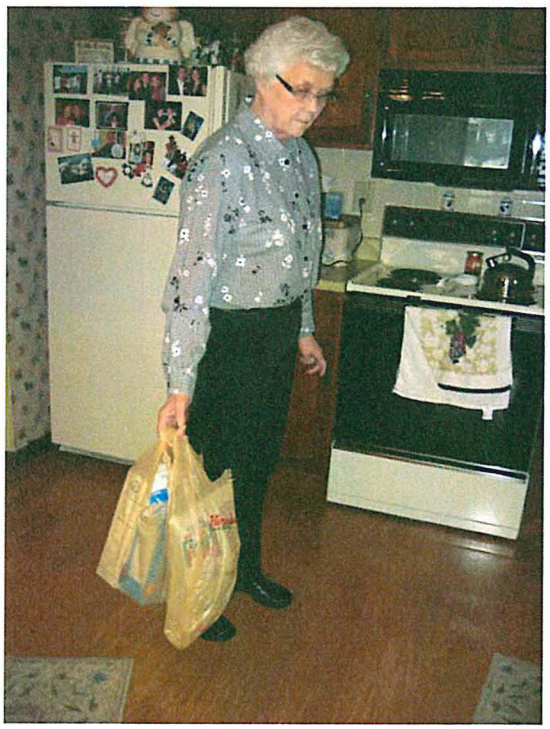
DO NOT: have cabinets open or clutter on the floor. These can be tripping hazards.

Shopping

- Make grocery list according to the layout of the grocery store to reduce backtracking.
- Make several trips with the grocery bags rather then trying to carry too much at one time.
- Always use a cart rather than trying to carry a few items around the store
- Put bags on counter right away as you bring them in the house so you do not have to pick them up off the floor when you put them away

DO NOT: carry a lot of grocery bags in both hands.

DO: carry fewer grocery bags in one hand and use other hand to grab railings and maintain balance.

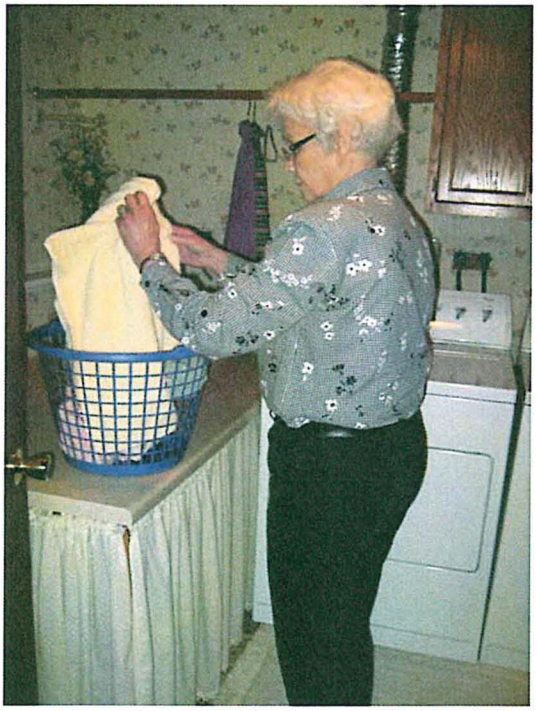


Laundry

- Sit down when folding laundry
- Keep commonly used items in an easy to reach place.
- Do laundry more often. Do one load each day, rather than several in one day.
- Install a laundry chute
- Keep laundry basket at a good height when putting in or taking clothes out of the basket

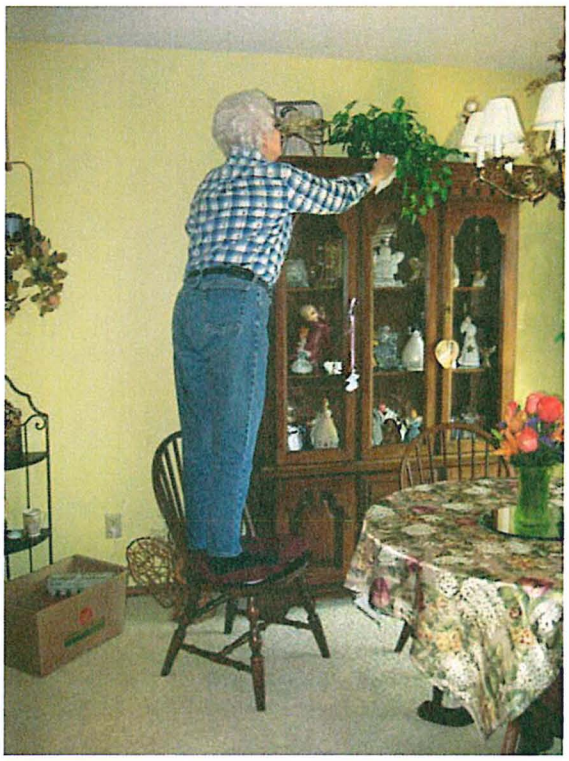
DO NOT: keep laundry basket on floor and take out clothes from floor.

Do: fold laundry at waist level on a table.



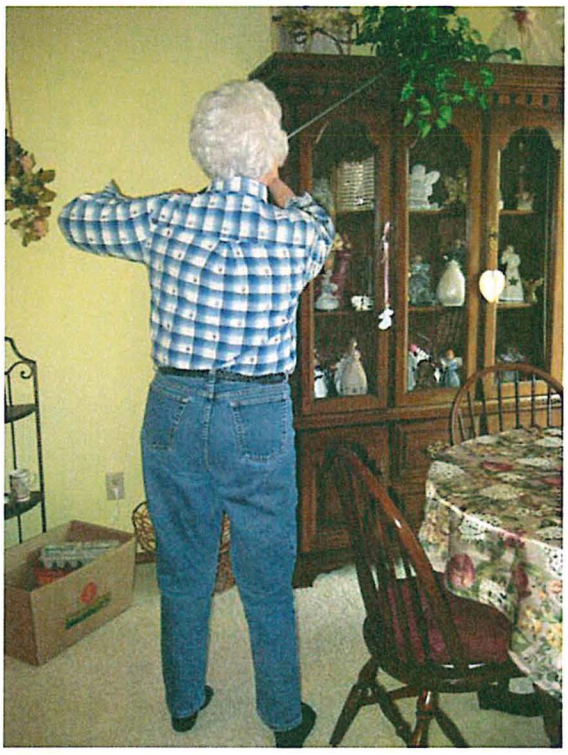
Cleaning

- Keep commonly used items in an easy to reach place.
- Keep cleaning supplies in an easy to carry tote to reduce number of trips to gather cleaning supplies.
- Use long handled tools or brushes for dusting and cleaning in hard to reach places



DO NOT: stand on chair to dust or clean high areas.

DO: use a long handled cleaning tool to reach high places.



Personal Hygiene and Grooming

- Sit when possible
- If you like to stand while grooming, have a seat nearby in case you tire.

Gardening

- Avoid bending or reaching down to low places.
- Sit down on a low stool when possible.
- Use long handled garden tools to avoid bending.
- Have a raised garden (can be built out of wood).
- Use a cup or shovel to get potting soil out of bag rather than pouring it out of the heavy bag.

Picture of a raised garden to reduce bending down.

Safety During Occupations
Instructions for Professional Leader

Instructions: There is a printable handout provided to give to each participant. The professional should discuss the handout as a group to make sure the participants understand the importance of safety during occupational activities.

When possible: consider demonstrating the occupation in a safe manner. For example, if a bathroom is available, demonstrate the safety tips that are in the handout. Demonstrations will depend on the availability of supplies.

Laundry example: Often times older adults are not aware that transitional movements and bending can cause a fall. It is important to also express the importance of placing commonly used items in easy to reach places. If the older adult expresses concern while bending and doing transitional movements, discuss other options and ways to reduce the amount of bending and twisting during occupational tasks. For example, keep clothes and other laundry material on a table to eliminate bending down. Some adults may not have a fear of bending down.

Laundry demonstration example: The professional can demonstrate the proper way of bending down to pick up the basket for back protection. The professional can also state that if a person continues to safely bend and use muscles, occupation-based activities such as laundry can keep muscle strengthened.

FALLS PREVENTION

Staying Active

Week 4

Week 4

Purpose:
The purpose of week 4 is to teach the importance of staying active. So many times older adults are scared or think being active is not for them. However, being active helps them stay strong and is necessary to stay healthy, prevent falls, and age in place.

Week 4 will consist of:

- Opening activity (choose 1)
    - Verbal Survey
    - Balloon Toss
    - Hokey-Pokey/Chicken Dance
- Fitness Center In-Service
- Fitness Center Consultations

Overview:
One of the 3 provided opening activities should be completed. Make sure each participant has signed the sign-in sheet. The fitness in-service should be conducted by a professional to promote the well-being of the older adults and to teach safety precautions while being active. Following the in-service and exercises there will be time to meet with the professional for fitness center consultations. The participants will also have the opportunity to ask further questions and/or set-up memberships for an exercise plan. Make sure the professional introduces the next week topic and encourages participants to return. Make any necessary announcements about scheduling and location of next session.

Opening Activities
Instructions for Professional Leader

Choose 1 warm-up activity from the list below to get the older adults engaged in the session.

1) Verbal Survey

Purpose: The purpose is to get the older adults thinking about what they do and what they have done for exercise throughout their lives. This will reiterate the need for daily activity and exercise. It will give professionals the chance find out how many people exercise and what the older adult population likes to do for exercise in order to find the best suited form activity for each individual.

Activity: informally ask the participants questions provided on the survey sheet and have a few of them share their answers out loud for each of the questions

Supplies: Printed handout of the survey

2) Balloon Toss

Purpose: The purpose of the balloon toss is to get the participants up and moving. This will be an enjoyable activity that they can laugh and have fun with. This is a form of exercise that the participants are able to stand and may have to move around in order to get to a balloon. It is exercise for the arms whether standing or sitting as the participant can reach out in order to hit the balloon to another person.

Activity: The group of participants will stand and form a large circle. There will be 3-5 balloons thrown into the middle depending upon the number of people. The balloons will be tossed around the circle for 3-5minutes. Each participant should have the opportunity to hit the balloon to another participant in the group. At the end of the 3-5 minutes the people who are holding the balloons with be able to pop the balloons to find a piece of paper that will indicate a prize that they will receive.

Supplies: Balloons, paper, and prizes for the number of balloons used

3) Hokey-Pokey and/or Chicken Dance

Purpose: The purpose of this activity is to get the participants up and moving. This will hopefully be an enjoyable activity that they can laugh and have fun with. This is a form of exercise as they will be up and moving which will increase their heat rates with the active body movements they choose to do. This will also hopefully bring back memories that they can enjoy as they becoming active.

Activity: The group will stand/sit in a circle and the hokey pokey or chicken dance will be played. The older adults will join in and participate as they feel comfortable.

Supplies: Hokey-Pokey and/or Chicken Dance music

Verbal Survey
Instructions for Professional Leader

1) Do you do a form of physical activity each day? If so, what and how often?

2) What are your three favorite forms/types of exercise?

3) Do any of you participate in group exercise classes at a local gym or facility?

4) If you answered no to the first three questions, what are the reasons you do not participate in daily exercise?

5) Would you like to learn about different exercise options?

FALLS PREVENTION

Home Safety

Week 5

Week 5

Purpose:

The purpose of week 5 is to educate the older adults how to make their homes and environments safer. This is also to encourage them to take a look at their own homes and make necessary changes and/or home modifications. Home assessments can also be done where changes and recommendations can be made at that time.

Week 5 will consist of:

- Opening activity (choose 1)
    - Quick Questionnaire
    - Changes and Modifications
    - What's wrong with this Picture?
- Home Picture activity
- Home Hazard Checklists
    - CDC Home Checklist (not included in manual)
        - www.cdc.gov

The Home Checklist can be printed online from:

- http://cdc.gov/HomeandRecreationalSafety/pubs/English/booklet_Eng_desktop-a.pdf

Overview:

One of the 3 provided opening activities should be completed. Make sure each participant has signed the sign-in sheet. The home safety educational session will provide the participants with an understanding as to why reducing hazards and increasing home safety is important to reduce the risk of falling. An occupational therapist should be a part of this session because of their skills and knowledge about home assessments and adaptive equipment needs. Following the opening activity, there will be a handout that requires the participants to identify home hazards from simulated pictures. When the hazards are identified, the professional should discuss the answers and possible alternatives for the situation in order to educate the older adults on how to make their homes safer. Make sure the professional introduces the next week topic and encourages participants to return. Make any necessary announcements about scheduling and location of next session.

Opening Activities
Instructions for Professional Leader

Choose 1 warm-up activity from the list below to get the older adults engaged in the session.

1) Quick Questionnaire

Purpose: The purpose of this short questionnaire is to find out what has been done in the past, what worked the best, and also to find out if there is anything further that the Occupational Therapists can help with. This will continue to make them think about their own homes and how they can make a difference by changing or modifying home hazards.

Activity: Each participant will be given a short questionnaire and will be asked to fill it out.

Supplies: Printed questionnaires to give to each participant

2) Changes and Modifications

Purpose: The purpose of this is to help individuals learn to identify their own home hazards and also to help them start thinking about changes they can make in their homes. This will also allow the participants the opportunity to hear what others are going to do to their home and possibly give them ideas they had not thought of doing.

Activity: Each participant will be asked to share, out loud, three changes or modifications they plan to do to their own home in order to make it a safer place. Someone in the group can start and can either choose someone to go next or they can just go around the room until everyone has shared their changes/modifications.

Supplies: Give a pencil and paper to each participant so they can take notes as they learn from the other program members.

3) What's wrong with this Picture?

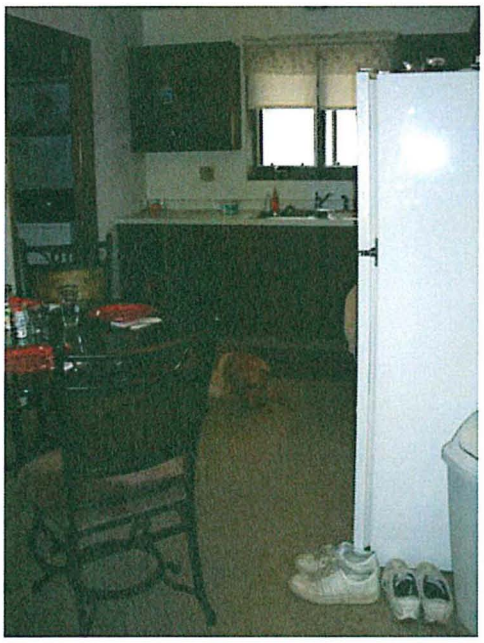
Purpose: The purpose of this activity is to help individuals begin to pick out home hazards and learn how to change or modify the hazard.

Activity: A large picture will be shown on an overhead screen where all the participants can see it. The entire group will study the picture and come up with at least five home hazards and then discuss what could be changed or modified in order to make the picture safer.

Supplies: A computer and projector as well as a copy of the picture with the answers

What is wrong with this picture?

Can you find 5 things wrong with the pictures and tell how you could fix them to make a safer kitchen?



1)

2)

3)

4)

5)

Home Safety Questionnaire

1 Scatter rugs look nice and they are also safe to have around the home. **True or False**

2 What items have you installed in your own home? **Circle all that apply - Grab Bars, Extra lighting, Railings, Rubber backed rugs, Shower chairs, Other**_____

3 What items worked the best and why?

_____

_____

4 Have you ever had a professional evaluate the safety of your home? **Yes or No**

5 Have you ever been given instructions on how to make your home a safer place? **Yes or No**

6 Are you interested in an occupational therapist coming to your home to do a home hazard/safety evaluation? **Yes or No**

If yes, please leave your name and phone number

_____

(Optional) If no, why not?

_____

_____

_____

Home Hazard Activity

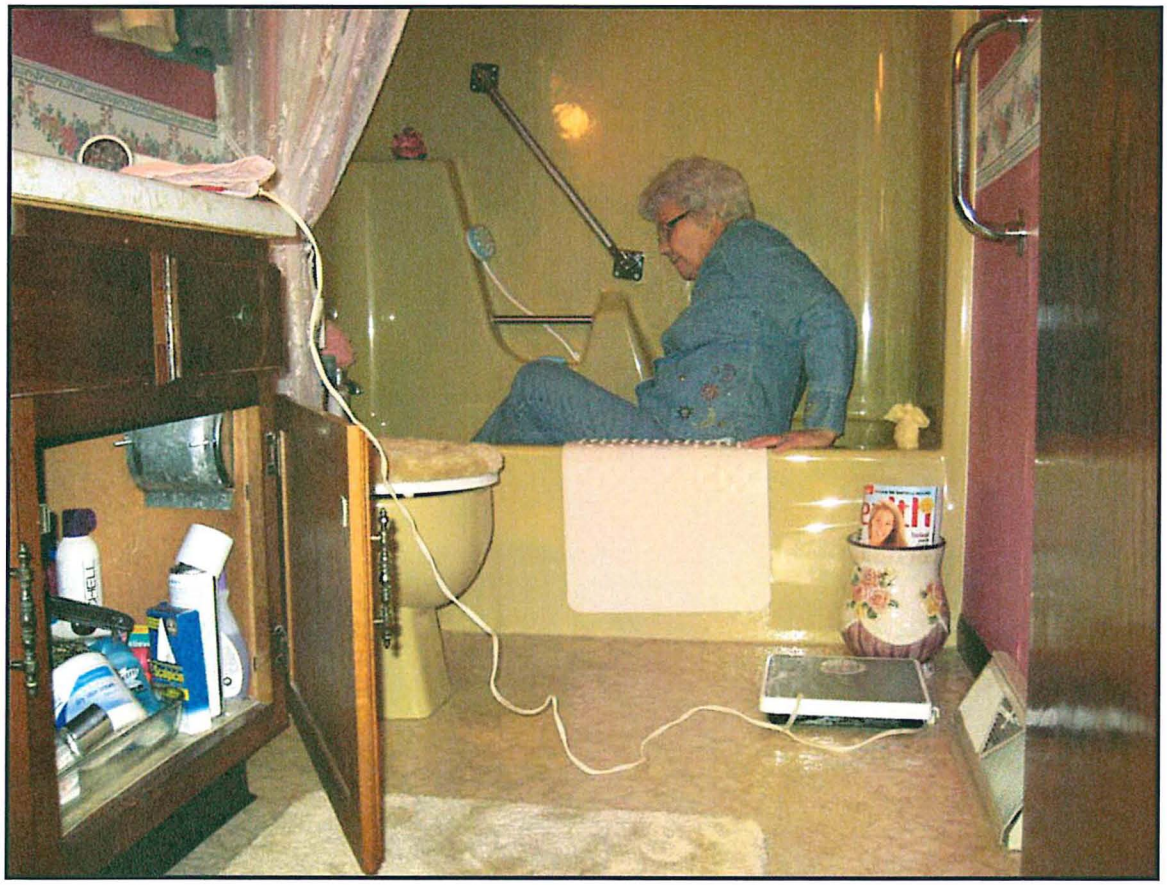
Can you identify and circle at least 4 environmental hazards. Once you have done so, you may check your answers on the last page. You may also use this to identify environmental hazards in your OWN home.

Kitchen

Home Hazard Activity

Can you identify and circle at least 4 environmental hazards. Once you have done so, you may check your answers on the last page. You may also use this to identify environmental hazards in your OWN home.

Bathroom



Home Hazard Activity

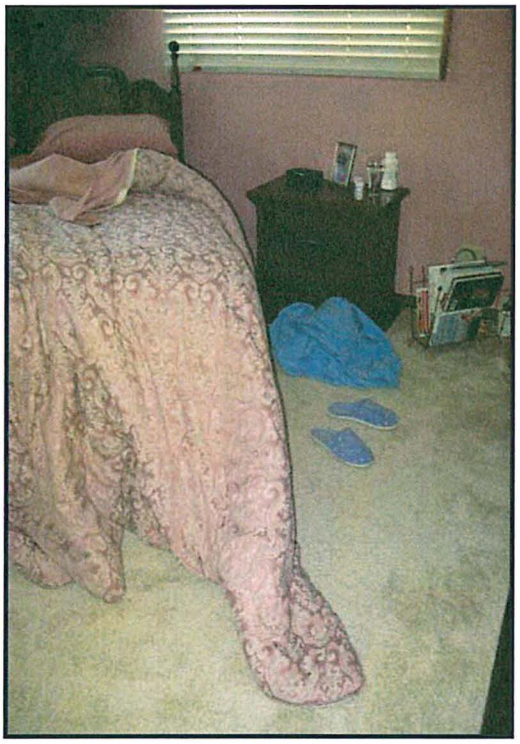
Can you identify and circle at least 4 environmental hazards. Once you have done so, you may check your answers on the last page. You may also use this to identify environmental hazards in your OWN home.

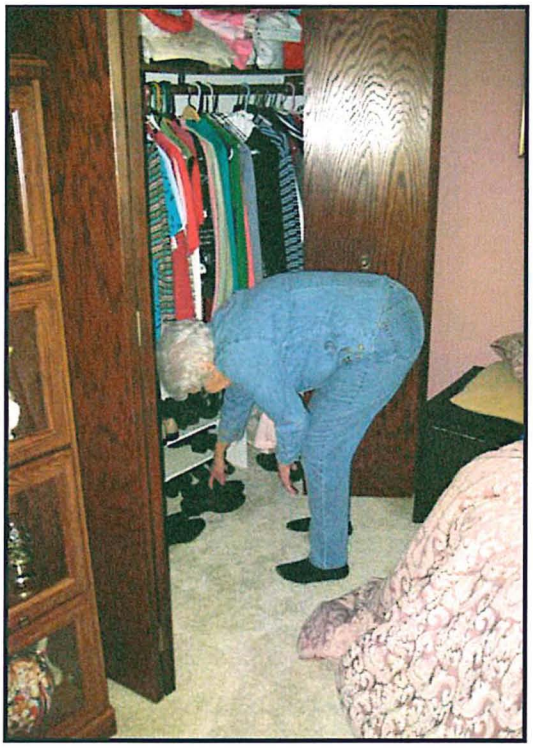
Living Room

Home Hazard Activity

Can you identify and circle at least 4 environmental hazards. Once you have done so, you may check your answers on the last page. You may also use this to identify environmental hazards in your OWN home.

Bedroom





Home Hazard Activity

Can you identify and circle at least 4 environmental hazards. Once you have done so, you may check your answers on the last page. You may also use this to identify environmental hazards in your OWN home.

Stairs

Answers and Alternatives

Kitchen: Answers

1) Dishwasher open
2) Table chair pulled out
3) Walker in middle of kitchen floor
4) Person is reaching way in back of fridge

Kitchen: Alternatives

1) Keep Dishwasher Closed
2) Keep all chairs pushed in
3) Keep walker near you at all times
4) Keep commonly used items in the front of the fridge

Bathroom: Answers

1) Cutter in front of the bathtub
2) No grip mat to step out on to
3) Not using grab bar to get out of bathtub
4) Hairdryer cord running across the floor
5) Not using grip mat while in bathtub
6) Cabinet open

Bathroom: Alternatives

1) Remove clutter next to the bathtub
2) Add grip mat to reduce slippery floors when wet
3) Use grab bars when possible for safety
4) Put items away and wrap up cord after each use
5) Use a grip mat in bathtub to prevent slipping
6) Close cabinet after using

Living Room: Answers

1) Lamp cord trailing through middle of living room
2) Newspapers/magazines spread across floor
3) Sitting down into the rocking chair while holding food and without putting arms back
4) Cell phone is not within reach
5) Walker is not next to the person

Living Room: Alternatives

1) Keep cords out of walking paths
2) Remove clutter to prevent tripping
3) Set items down before sitting, put arms back to feel for the chair before sitting
4) Keep cell phone within reach to avoid rushing to get up to answer the phone
5) Keep walker next to you so that it is there when you want to get up out of the chair and not reaching for it

Bedroom: Answers

1) Bed spread dangling onto the floor
2) No lamps near the bed-low lighting
3) Slippers and robe on floor beside bed
4) Reaching down to the floor to choose a pair of shoes

Bedroom: Alternatives

1) Keep bed made and bedspread tucked in out of the way
2) Make sure there is adequate lighting throughout
3) Remove bedside clutter
4) Keep shoes on shelves within reach

Stairs: Answers

1) Low light
2) Not using railing
3) Vacuum left at the bottom of the stairs
4) Pair of shoes and umbrella in the middle of stairs
5) Left walker at the top of stairs rather than using it

Stairs: Alternatives

1) Add nightlights to all staircases and hallways
2) Always use available railings for stability
3) Keep items out of walking paths (remove vacuum)
4) Remove clutter from stairway to prevent tripping
5) Fold up walker and use it for stability and so it will be with you when you reach the bottom of the stairs.

Upon Completion

You have now practiced identifying home hazards and have had the chance to review and fix some of the hazards as well as learn the alternatives for each. It will be beneficial to use this as well as other provided checklists to check your OWN home for environmental hazards immediately following the completion of this activity.

FALLS PREVENTION

Putting it all Together

Week 6

Week 6

Purpose:
The purpose of week 6 is to reiterate the importance of putting the entire program into small easy steps in order to make one large lifestyle change. This week is designed to provide individuals with the knowledge that not just one change is enough to prevent falls, but that all 6 weeks can make a life changing difference to help older adults age in place.

Week 6 will consist of:

- Activities
  - Final Quiz
  - What will be different?
  - Program Evaluations
    - Tinetti Gait and Balance Evaluation & Falls Efficacy Scale
      - Instructions found in Week 1
    - Program Questionnaire
- Putting it all together
- Awards Ceremony

Overview:
For week 6, it will be most beneficial to complete all activities provided. This is the closing session of the entire program. Upon completion of the final quiz and the discussion about what could be different, the professional should administer the Tinetti Gait and Balance Evaluation and the Falls Efficacy Scale. Next the participants will complete the program questionnaire in order to help the professionals find ways to keep the program effective. The program evaluations will determine the effectiveness of the program as well as obtain objective data. At the end of this session, handouts will be provided to each participant about the importance of putting each of the six-week topics together in order to make a lifestyle change to prevent falls. Also, make sure to have a final awards ceremony if the awards system was used throughout the six-week program. Make sure to announce when and where the next six-week falls prevention program will be taking place. Announce that it will be similar to what they just completed but that it would be beneficial to come again.

Week 6 Activities
Instructions for Professional Leader

Complete each of the activities below.

1) Final Quiz- a final quiz will be given to each of the participant and plenty of time will be allowed to complete it. Once the quiz is finished the answers will be given out loud and each participant will correct their own. This is for fun and to show the participants what they have learned.

2) What will be different?- there will be a small discussion on what the participants have already done to make changes and what they plan to change in the future. This will allow the clients to again apply the program themselves and it will also allow them to learn from what their peers have done or plan to do. This can last as long or as short as desired but make sure the clients are sharing out loud.

3) Program evaluation- a short questionnaire will be passed out to each of the participants. They will be asked to complete the questionnaire and turn it back in. This is to help each person, who applies the program, implement the program in the most helpful and desirable manner.

4) Putting it all together- This is a handout that can be printed and given to each of the participants. The purpose is to reiterate the need of continuing the program as a whole and to teach the importance of the multifactorial falls prevention program. This handout was created to be given to each participant and discussed as a group. It will also be given to the participants as a reminder to stick with the entire program in the future.

5) Awards Ceremony- all final awards should be given. Awards can be chosen or they can follow the awards system sheet provided. This is an optional part of the program.

FINAL QUIZ

1) You should see your regular doctor _____?

A) Daily
B) Monthly
C) Yearly
D) Whenever you feel like it

2) You should learn about your medications and their side effects.

A) True
B) False

3) Circle all that are considered to be home hazards.

A) Scatter Rugs
B) Grab Bars
C) Clutter
D) Low lighting
E) Chairs with armrests

4) Exercise is necessary_____.

A) When I feel like it.
B) Once a month
C) 2-3 times each week
D) Never

5) When I sit in a chair, I should always reach back to find the armrests before sitting.

A) True
B) False

6) Where is good lighting important?

A) By the bed
B) Near staircases
C) Everywhere
D) In hallways

7) If something changes with the way I feel I should.

A) Hope it goes away in a couple of days
B) Notify your regular doctor
C) Do nothing
D) Tell a family member

8) Vision and hearing exams are necessary.

A) True
B) False

9) If I am afraid of falling I should_____

A) Stay home
B) Continue daily life with safety
C) Do little by little
D) Only do what I am comfortable with

10) Exercise is necessary to_____.

A) Increase strength

B) Improve balance

C) Stay Healthy

D) All of the above

Please see the professionals for any further questions or concern. ☺

Final Quiz Answers
Instructions for Professional Leader

1. C, Yearly
2. A, True
3. A, Scatter Rugs, C, Clutter, D, Low Lighting
4. C, 2-3 times each week
5. A, True
6. C, Everywhere
7. B, Notify your regular doctor
8. A, True
9. B, Continue daily life with safety
10. D, All of the above

Program Evaluation

1. Did this program benefit you?
   Yes No

Please explain:

_____

_____

_____

2. What changes have you made since the start of this program?

_____

_____

_____

3. Has your confidence and activity level increased over the past 6 weeks?
   Yes No

If yes, please explain:

_____

_____

_____

4. Have you made any home modifications to reduce the risk of falls?
   Yes No

   If yes, please explain:

   _____

   _____

   _____

5. What changes do you feel could be made to improve the experience of this falls prevention program plan?

   _____

   _____

   _____

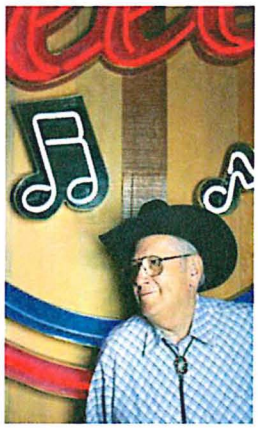
6. Have you fallen in the past 6 weeks?
   If so, how many times? _____

Thank you for taking the time to complete this survey. We hope the falls prevention program has been helpful!

Putting It All Together

- It is necessary to continue to do ALL that you have learned throughout this falls prevention program.

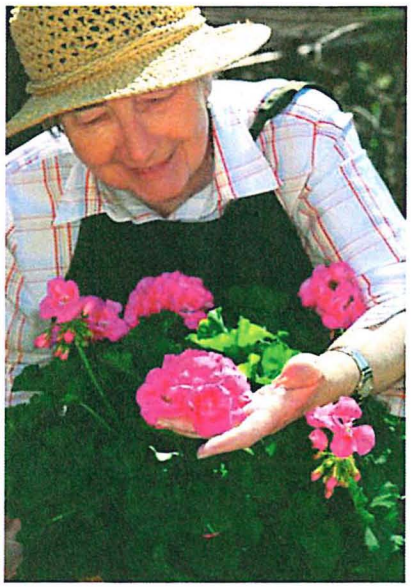
  - Be aware of risk factors
  - See healthcare providers regularly
  - Have your vision checked
  - Stay active
  - Make your home safer
  - Stay hydrated and eat healthy
  - Check your medications and learn the side effects



- This may take some time to get used to all the changes; however, once it becomes part of your daily routine it will become a new healthy lifestyle rather than a few changes.

- With a continued lifestyle change, falls will more likely be prevented and one can safely AGE IN PLACE due to:

  - An increase in strength
  - Increased confidence
  - A safer home
  - Proper medication use
  - Vision corrections
  - A healthy diet



***This program was designed to educate older adults about the prevention of falls. It is not guaranteed to keep each person from falling.**

Optional Rewards System
Instructions for Professional Leader

Rewards are a good way to keep people motivated and there are several different ways to reward people. Here are some examples of how a rewards system will work while implementing a falls prevention program.

- Give a reward to each person who attends the first week. (This will encourage them to keep coming.)
- Give a reward to each person who can bring two friends to the following week. (This will help them socialize as well as get more people involved in the prevention of falls.)
- Give a final reward to each person who attends all six weeks. (This will be given as a thank you for coming and will be tracked by the sign-up sheet that will be passed around at the beginning of each week.)

Possible rewards for the older adults attending the falls prevention program.

- Gift cards
- 1 month membership to a fitness center
- A bag of lefsa
- Gardening tools
- Shoe grippers
- Night lights

APPENDICES

FALLS PREVENTION
SIGN-IN SHEET
WEEK

1_____	11_____
2_____	12_____
3_____	13_____
4_____	14_____
5_____	15_____
6_____	16_____
7_____	17_____
8_____	18_____
9_____	19_____
10_____	20_____

University of North Dakota

Department of Occupational Therapy

Diagram Consent Form

I consent and authorize Brittanie Field, Krista Radi, Cindy Janssen, MOT, OTR/L, and the UND Department of Occupational Therapy to use diagrams I participated in making for the purpose of creating of Falls Prevention program manual. The diagram and my name can be used together with Falls Prevention information, in publications, productions, and presentations.

This consent form is retained by Brittanie Field, Krista Radi, and Cindy Janssen and will be placed on file. The consent can be modified or withdrawn in writing at any time however, any changes will only apply from the date of receipt by Brittanie Field, Krista Radi, and Cindy Janssen. Any existing material in which the image is used will not be withdrawn from use.

Allison V. Rue 4/29/09

Image Consent Form

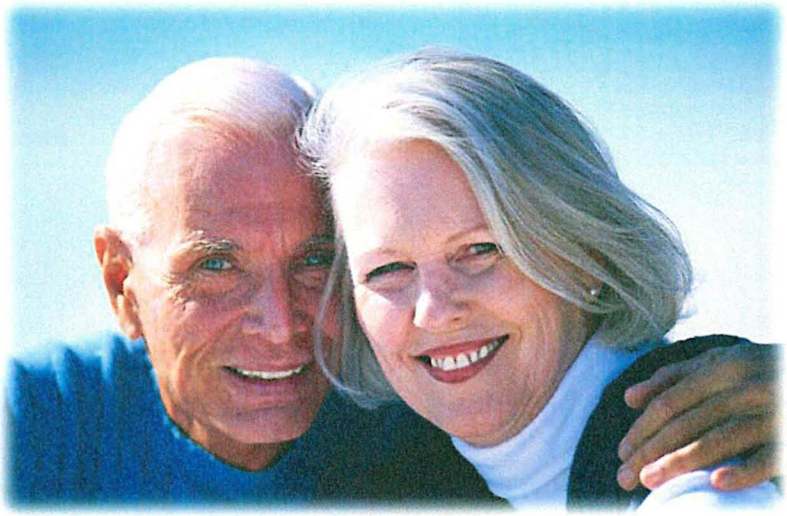
I consent to and authorize Brittanie Field, Krista Radi, Cindy Janssen, MOT, OTR/L, and the UND Dept of Occupational Therapy to take, use and disclose images of myself and my name together with Falls Prevention information, in publications, productions, and presentations in connection with occupational therapy work.

This Consent Form is retained by Brittanie Field, Krista Radi, and Cindy Janssen and will be placed on file and a copy will be provided to the Participant. The consent can be modified or withdrawn in writing at any time however, any changes will only apply from the date of receipt by Brittanie Field, Krista Radi, and Cindy Janssen. Any existing material in which the image is used will not be withdrawn from use.

Darlene Radi 4/10/09

Advertisements

The following 6 sheets are weekly advertisements sheets that can be placed throughout the community and Senior Citizen Center (SCC) in order to promote the Falls Prevention Program. The advertisements include the date, time, and location of the program for each weekly session.



FALLS PREVENTION
Educational Session

Come learn how to prevent falls in your life and age in place!

Date: [insert date]
Time:
Location:

FALLS PREVENTION
Screening Fair

Come learn how to prevent falls in your life and age in place!

Date: [insert date]
Time:
Location:

FALLS PREVENTION
Daily Activities

Come learn how to prevent falls in your life and age in place!

Date: [insert date]
Time:
Location:

FALLS PREVENTION

Staying Active

Come learn how to prevent falls in your life and age in place!

Date: [insert date]

Time:

Location:

FALLS PREVENTION

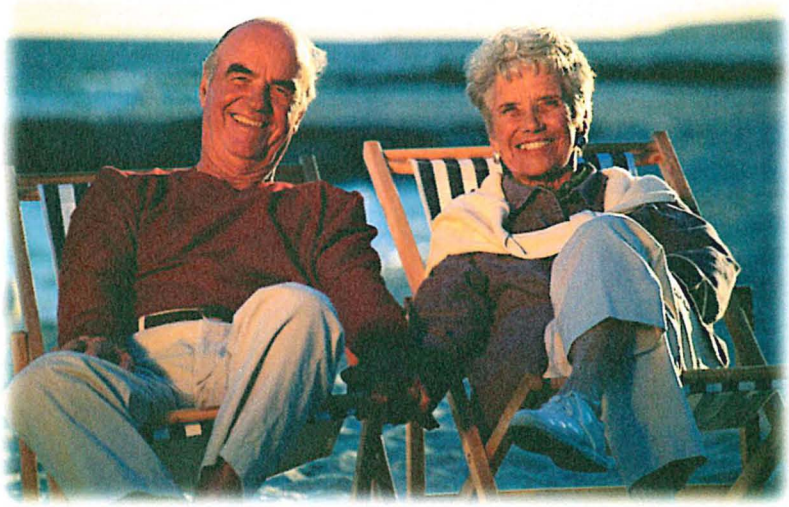
Home Safety

Come learn how to prevent falls in your life and age in place!

Date: [insert date]

Time:

Location:



FALLS PREVENTION
Putting it all Together

Come learn how to prevent falls in your life and age in place!

Date: [insert date]
Time:
Location:

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CHAPTER V

SUMMARY

The purpose of this scholarly project is to provide a multidisciplinary falls prevention program manual in which an occupational therapist (OT) can implement at Senior Citizen Centers (SCC). The product is used to promote healthy aging in place among the older adult population through the use of a variety of falls prevention strategies and meaningful occupations. The manual will provide professionals and older adults with knowledge for the prevention of falls that will allow them to safely and independently age in place. The program will be unique to existing falls prevention programs as it is multidisciplinary and focuses on occupation-based activities to promote older adult participation in the home and community environments.

This falls prevention program offers one hour weekly sessions that take place over the course of six weeks. The weeks are broken down and categorized into an educational session, a screening fair, a daily activities session, a staying active session, a home safety session, and putting it all together. Some of the strengths of this program are that it is multidisciplinary and uses a variety of falls prevention strategies that are supported by the literature. The goal of the program is to give community-dwelling older adults knowledge and skills needed to prevent future falls to safely and independently age in place.

The falls prevention program has some limitations. One limitation is that the program is designed to be directed and implemented by an OT; therefore there must be an OT available throughout the six week program. Another limitation is that the program

calls for leadership participation of several other professionals which can be challenging due to the rural locations of many SCCs.

In order to assure success of the falls prevention program there are some recommendations to consider. It is recommended that prior to implementation; a grant should be applied for in order to access adequate funding. The program should be implemented and specifically followed to reach the full potential of the program. It should also be viewed as an ongoing lifestyle change rather than a six week program. This might be accomplished by repeating the program several times throughout the year. The activities should be modified over time in order to stay current with research on falls prevention to effectively meet the needs of older adult participants.

To determine the effectiveness of this falls prevention program, evaluations are included. This is a subjective program evaluation that can be completed by each of the participants during the last week of the program. The professionals implementing the program should review the evaluations and make necessary changes in order to improve and provide the most effective program. This will also give the participants the chance to rate their satisfaction of the program. Another direct evaluation used to determine the effectiveness of the program is through the data gathered from Tinetti Gait and Balance Evaluation and the Falls Efficacy Scale. These should be given a second time at the end of the program in order to compare the results with the scores from the initial evaluation. Further research can be conducted after this falls prevention program has been implemented as new possibilities will continue to be discovered. By following the recommendations and continuing to evaluate and update the program this will allow the

older adults to prevent future falls, promote older adult participation in the community and home environments, and safely age in place.

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